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TELEGRAPHIC ADDRESS—LANCET, WESTRAND LONDON TELEPHONE NUMBER—GERRARD 5356

No. II. OF VOL. I., 1913.
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CONTENTS.

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HORACE DOBELL LECTURES
(The) on Insect Porters of Bacterial Infection. Delivered at the Royal College of Physicians of London, November, 1912, by CHARLES J. MARTIN, D.Sc., M.B. Lond., F.R.S., Director of the Lister Institute of Preventive Medicine; Professor of Experimental Pathology in the University of London.—Lecture II.—(*Illustrated*) 81

ORIGINAL ARTICLES.

Two Cases of Colloid Tumour of the Third Ventricle, Causing Death. By ARTHUR J. HALL, M.A., M.D.Cantab., F.R.C.P. Lond., Lecturer on Practical Medicine and Curator of the Pathological Museum, University of Sheffield; Physician to Sheffield Royal Hospital.—(*Illustrated*) 89

A Case of Pneumonotomy for Foreign Body. By THOMAS H. KELLOCK, M.C.Cantab., F.R.C.S.Eng., Surgeon to the Middlesex Hospital and to the Hospital for Sick Children. With Notes by C. R. C. LYSTER, M.R.C.S. Eng., and R. B. APPERLY, M.R.C.S. Eng., L.R.C.P. Lond.—(*Illustrated*) 92

Cecotomy for the Removal of a Hairpin Impacted in the Ascending Colon. By LAWRIE MCGAVIN, F.R.C.S. Eng., Surgeon to the Seamen's Society (Dreadnought) Hospital.—(*Illustrated*) 93

Myeloid Leukæmia in a Child with Blood Picture of So-called Megaloblastic Degeneration. By C. H. TREADGOLD, M.A., M.D. Cantab.—(*Illustrated*) 94

On the Alleged Diagnostic Value of the Provocative Injection of Old Tuberculin in Suspected "Closed" Pulmonary Tuberculosis." By E. R. A. T. RICE, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond., late House Physician to the Brompton Hospital for Consumption and Diseases of the Chest..... 97

CLINICAL NOTES:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

Note on a Case of Fracture of the Patella in a Patient Suffering from Locomotor Ataxia. By WALTER G. SPENCER, F.R.C.S. Eng., Surgeon to the Westminster Hospital 99

A Case of Punctured Wound of the Abdomen, Penetrating Both Walls of the Stomach, which Presented Misleading Symptoms. By JOHN A. C. MACEWEN, M.B., C.M., B.Sc. Glasg., F.R.F.P.S. Glasg., Assistant Surgeon, Glasgow Royal Infirmary; Surgeon to the Elder Hospital, Govan; Senior Assistant to the Regius Professor of Surgery, Glasgow University..... 99

MEDICAL SOCIETIES.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY: Exhibition of Cases..... 100

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY: Exhibition of Specimens.—Management of Difficult Labour 101

ROYAL ACADEMY OF MEDICINE IN IRELAND: Myomatous Uterus.—Polypus Complicating Inversion of Uterus.—Complications of a Hysterectomy.—Fibro-Sarcoma of the Ovary 101

UNITED SERVICES MEDICAL SOCIETY: Persian Gulf Experiences 102

REVIEWS AND NOTICES OF BOOKS.

Internal Secretion and the Ductless Glands. By Swale Vincent, M.D.Lond., D.Sc.... 103

Blood-vessel Surgery and its Applications. By Charles Claude Guthrie, M.D., Ph.D. 103

On Alcoholism, its Clinical Aspects and Treatment. By Francis Hare, M.D. Durh..... 104

Spezielle Diagnose der Inneren Krankheiten; ein Handbuch für Aertze und Studierende. Nach Vorlesungen bearbeitet von Dr. Wilhelm von Leube 104

Obstetrics: A Text-book for the Use of Students and Practitioners. By J. Whitridge Williams. Third edition 104

The Orientation of Buildings, or Planning for Sunlight. By William Atkinson..... 105

The Elements of Child-protection. By Sigmund Engel 105

Thérapeutique Usuelle du Praticien: Traitement de la Tuberculose. By Professor Albert Robin..... 106

Modern Road Construction. By Francis Wood, M.Inst. C.E., F.G.S. 106

The Medical Directory, 1913..... 106

Public Health Chemistry and Bacteriology. A Handbook for D.P.H. Students. By David McKail, M.D. Glasg., D.P.H. Camb..... 106

The Care and Treatment of European Children in the Tropics. By G. Montagu Harston, M.D. Lond..... 107

A Handbook on Surgery, intended for Dental and Junior Medical Students. By A. S. Underwood, M.R.C.S. Eng., L.D.S., and A. Bayford G. Underwood, M.B., B.S. Lond., &c. 107

First-Year Nursing: a Text-book for Pupils during their First Year of Hospital Work. By Minnie Goodnow 107

Primary Studies for Nurses: a Text-book for First-Year Pupil Nurses. By Charlotte A. Aikens. Second edition... 107

Mouth Hygiene and Mouth Sepsis. By J. S. Marshall ... 108

Herbert Fry's Royal Guide to the London Charities. Edited by John Lane..... 108

Miscellaneous Volumes..... 108

NEW INVENTIONS.

A New Urethrotome.—(*Illustrated*)..... 110

Steriliser Forceps for Vaccine Syringes.—(*Illustrated*) 110

LEADING ARTICLES.

THE NATIONAL INSURANCE ACT..... 111

INSANITY AND DIVORCE..... 112

THE NEW ORDER FOR COMPULSORY NOTIFICATION OF TUBERCULOSIS 113

ANNOTATIONS.

Radiations in Economics 114

A Historical Medical Museum.. 114

"Que Diable Fait Il.....?"..... 114

Bence-Jones Proteinuria: its Association with Metastatic Carcinomata of Bones 115

The Illness and Death of Napoleon Bonaparte..... 115

Vaccine Treatment in Pneumonia 116

Intracapsular Extraction of Cataract..... 116

Functions of the Pineal Body.. 117

December at Home and Abroad..... 117

Recent Studies of Pneumonic Plague 118

Appendicitis as a Local Manifestation of a General Infection 119

VITAL STATISTICS:
Health of English Town 124
Health of Scotch Towns 125
Health of Irish Towns 125

SPECIAL ARTICLES.

The Health of the Army in 1911.—I.—(*To be concluded*).. 119

King Edward's Hospital Fund for London: Meeting of the Governors and General Council.—List of Awards..... 121

Royal Medical Benevolent Fund..... 123

Local Authorities and Institutions for the Treatment of Tuberculosis 123

Playgrounds in Public Elementary Schools..... 124

The Services 126

Manchester 131

Wales 132

Scotland..... 132

Ireland..... 133

Paris..... 134

Vienna..... 135

THE NATIONAL INSURANCE ACT.

Recent Events..... 136

Mr. Lloyd George's Speech..... 136

The Rejoinder of the British Medical Association to Mr. Lloyd George 137

The Meaning of Section 15 (3).... 137

The Protest Meeting at Queen's Hall 137

Further Action of the London Medical Committee..... 138

CORRESPONDENCE.

Protective Ferments of the Animal Organism (Sir Lauder Brunton)..... 128

A Preliminary Note on the Effect of Sempervivum Tectorum in Cancer (Dr. Bouverie F. P. McDonald) ... 128

Drunkenness and the Effect of Alcohol (Dr. Thomas Dutton) 129

A Suggested Factor in the Causation of Chronic Catarrhal Otitis Media (Mr. Adair Dighton)..... 129

Emetine Salts in the Treatment of Dysentery (Major Leonard Rogers, I.M.S.) 129

Diphtheritic Enteritis (Dr. J. D. Rolleston)..... 129

The Children's Welfare Exhibition (Dr. H. Macnaughton-Jones, Dr. C. W. Saleeby, and Dr. P. Macleod Yearsley) 130

Unilateral Asthma (Dr. J. I. B. Berkart) 130

The Examination for the Degree of M.S. London..... 130

A "Typho-Malarial" Fever..... 131

The Medical Profession and the National Insurance Act (Dr. H. B. Luard, Dr. R. R. Rentoul)..... 131

MEDICAL NEWS.

Royal Institution 102

The late Duke of Abercorn..... 109

Royal London Ophthalmic Hospital 135

Pass-lists of the University of Cambridge and the University of London 138

Literary Intelligence..... 139

The Eugenics Education Society..... 139

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics: The Medical Service in the Highlands.—Blackwater Fever in Tropical Africa 139

House of Commons: Medical Men and the Insurance Panels.—The Finance of Medical Benefits.—The Right to Refuse Insured Patients.—Whole-time Appointments under the Insurance Act.—Independent Arrangements for Medical Treatment.—Professional Duties under the Insurance Act 139

Books, &c., received..... 142

Appointments 142

Vacancies 142

Births and Marriages 143

Notes, Short Comments, and Answers to Correspondents... 143

Medical Diary 144

Meteorological Readings 145

Acknowledgments of Communications received..... 145

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

PAGE

ARNOLD:—
Savill ..... Savill's Clinical Medicine ..... Cover 1
Sibley ..... Diseases of Skin. Cover 1

ASH, SONS & CO.:—
Hewitt, Sir F. .... The Administration of Nitrous Oxide and Oxygen 7

BAILLIERE, TINDALL & COX:—
Cabot ..... Physical Diagnosis Cover 1
Harston .... Care, &c., of Children in Tropics .... Cover 1
Kerr ..... Operative Midwifery Cover 1

BALE, SONS & DANIELSSON:—
Biecl ..... The Internal Secretory Organs ..... Cover 1
Loewenfeld.. On Conjugal Happiness Cover 1

CASSELL & CO.:—
Morris Sir M. .... Diseases of the Skin .. 6

CHURCHILL, J. & A.:—
Cripe ..... Ovariotomy, &c. 6
Domville & Warden .. Radium-Therapy in Malignant Disease Cover 1
Fenwick .... The Value of Radiotherapy ..... Cover 1
Medical Directory, 1913 ..... Cover 1
Thorne, Besly..... Schott Nauheim Treatment, &c., of the Heart 7
Who's Who in Science, 1913 .. Cover 1

CONSTABLE & CO.:—
Bedrock 6

FROWDE AND HODDER & STOUGHTON:—
Lockwood .. Aseptic Surgery..... 6
,, .. Clinical Surgery 6
McCann .... Cancer of the Womb, &c. ..... Cover 1

GLAISHER:—
Savill ..... Neurasthenia .. Cover 1
,, ... Hysteria ..... ,, 1
West ..... Granular Kidney and Physiological Albuminuria 6

HARRISON & SONS:
Whitefoord .. An Operating Theatre in Private Practice Cover 1

LEWIS:—
Martindale & Westcott .. Extra Pharmacopœia.. 3

MACMILLAN & CO.:—
Ballance .... Cerebral Decompression in Ordinary Practice.. 6
Lockwood .. Appendicitis 6

MEDICAL PUBLISHING CO.—
Lane ..... Operative Treatment of Fractures..... Cover 1
,, ... Cleft Palate and Hare Lip ..... Cover 1

NISBET & CO.:—
Lane ..... Treatment of Chronic Constipation .. Cover 1

SAUNDERS COMPANY—
Cotton ..... Dislocations and Joint Fractures 5
Crandon & Rheinfried Surgical After-Treatment 5

SAUNDERS.—(Continued)
Scudder .... Tumours of the Jaws .. 5
Some Important Publications. Cover 1
Steelwagon .. Diseases of the Skin .. 5
The Surgical Clinics of John B. Murphy, M.D. 5

UNIVERSITY OF LONDON PRESS:
Bernstein.... Applied Pathology.... 6
Bidwell .... Minor Surgery 6
Biggs..... Diseases of Ears &c .. 6
Evans ..... Diseases of the Skin .. 6
Marshall.... Diseases of the Eyes .. 6
Mortimer.... Anæsthesia and Analgesia 6
Stevens .... Diseases of Women .. 6
Turner, &c.. Treatment after Operation 6
Whipham .. Medical Diseases of Children 6

WRIGHT & SONS (BRISTOL):—
Smith ..... Lateral Spinal Curvature, &c. ..... Cover 1

MEDICAL LIBRARIES, &c.:—
Baker, Birmingham—Books,..... 7
Behnke—Stammering 7
Lewis's Medical and Scientific Circulating Library 3

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
Addington Hospital, Durban 66
Belgrave Hos. for Children, Clapham 64
Birkenhead Union 64
Birmingham General Dispensary ... 64
Blackburn and East Lancashire Infirmary 63
Bradford Royal Infirmary 66
Brentford Union Infirmary 66
Bristol Royal Infirmary 63
Calderdruik and District 63
Central London Ophthalmic Hos.. 65, 66
City of Cardiff 66
City of London Hospital for Diseases of the Chest 66
City of Wakefield 63
County Borough of Blackburn Education Committee 64
District Infirmary and Children's Hospital Ashton-under-Lyne 64
E. Sussex County Asylum, Hellingly. 66
Eskdalemuir Parish Council 66
Garthloch Mental Hospital 66
Hampstead General and North-West London Hospital 63
Herts County Asylum, St. Albans.... 63
Hosp. for Consumption and Diseases of the Chest 63
Hospital for Sick Children 66
Hospital for Women, Soho-square.... 66
Kent County Council 63
Kent County Ophthalmic Hospital, Maidstone 66
King Edward VII.'s Hospital, Cardiff. 65
King Edward VII. Welsh National Memorial 63
King's College Hospital 64
Laboratories of Pathology and Public Health 63
Leeds General Infirmary 65
Leicester Royal Infirmary 66
Leicestershire and Rutland County Asylum 66
Middlesex Education Committee 64
Middlesex Hospital Cancer Research Laboratories 63
National Hospital for the Paralysed. 63
New Hospital for Women 66
Newcastle-on-Tyne Dispensary 66
Nottingham General Dispensary 65
Oxford County Asylum, Littlemore.. 65
Putney Hospital 64
Queen's Hospital, Birmingham 64
Royal Dental Hospital 66
Royal Free Hospital, Gray's Inn-road 63
Royal National Orthopædic Hospital 65
Royal Naval Medical Service 65
Royal Portsmouth Hospital 65
Royal Surrey County Hospital, Guildford 66
Royal United Hospital, Bath..... 64
Royal Victoria and West Hants Hospital, Bournemouth 66
Royal Waterloo Hospital for Children and Women 66
St. Bartholomew's Hospital 64
South Devon and East Cornwall Hospital, Plymouth 64
South Yorkshire Asylum, Wadsley .. 64
Surrey Dispensary, Southwark 64
Swansea Union Workhouse 64
Tunbridge Wells General Hospital .. 66
University of Liverpool 63
Western Ophthalmic Hospital, Marylebone-road 66
Westmorland Consumption Sanatorium 65
West Riding Asylum, Menston 66
Wolverhampton and Staffordshire General Hospital 66

APPOINTMENTS—(Continued).
York County Hospital 63
York Dispensary 65

ASSISTANCIES, MEDICAL:—
Arnold & Sons, Giltspur-street 66
Athertons, Ltd., Chancery-lane..... 67
Bee & Mare n, Birmingham 66
Medicus, West Derby 67
No. 102, L.O., Strand 67
No. 108, L.O., Strand 67
No. 111, L.O., Strand 67
No. 117, L.O., Strand 67
No. 118, L.O., Strand 67
No. 125, L.O., Strand 67
No. 124, L.O., Strand 67
No. 125, L.O., Strand 67
No. 126, L.O., Strand 67
Scholastic, Clerical, &c., Association, Craven-street 66
Turner, Adam-street 67

ASYLUMS, HOMES, &c.—
Ashwood House, Kingswinford 56
Association of Medical Men Receiving Resident Patients 62
Barnsley Hall, Bromsgrove 56
Barnwood House Hospital..... 57
Bishopstone House, Bedford..... 56
Brunton House, Lancaster..... 62
Buntingford House Retreat, Buntingford 59
Camberwell House, Peckham-road.... 56
Capel Lodge Retreat, Folkestone 55
Cheadle Royal 56
Clarence Lodge, Clapham-park 57
Colchurst House, Warford..... 62
Coppice, The, Nottingham..... 57
Crookstury Sanatorium, Surrey..... 62
Dadson Nursing Home 55
Dairymple House, Rickmansworth .. 59
David Lewis Colony, Alderley Edge.. 62
Doctor, Golder's Green 62
Farnham House, Dublin 58
Ghyllwoods 59
Grove House, Church Stretton 57
Grove, The, Catton, Norwich 57
Haydock Lodge, Newton-le-Willows . 58
Heigham Hall, Norwich 56
Hendon Grove, Hendon 56
Home for Epileptics, Maghull 62
Inverneth Lodge Sanatorium, Colinsburgh 59
Kingsdown House, Box 56
London Fever Hospital 57
Maiding Place, Kent 57
Malvern Hydropathic 56
Manna Mead, Blackheath 62
Maryville, Dublin 58
Melbourne House, Leicester 55
Middleton Hall, Co. Durham 58
Moat House, Tamworth 57
Mount Pleasant, Wanstead 62
Mount Vernon Sanatorium, Northwood 60
Newmains Retreat, Lanarkshire 59
Nordrach-on-Dee, Banchory 60
Northlands Retreat, Wandsworth.... 55
Northumberland House, Finsbury-park 56
Northwoods House, Winterbourne 56
Norwood Sanatorium, Ltd. 58
No. 101, L.O. Strand..... 62
No. 102, L.O., Strand..... 62
Osea Island, Heybridge 59
Ostler, Dr., Capedalotti..... 11
Otto House, West Kensington..... 62
Painswick Sanatorium 62
Peckham House 56

ASYLUMS—(Continued.)
Penydyffryn Hall Sanatorium 60
Pinwood Sanatorium..... 57
Plympton House, South Devon 57
Portsmouth Corporation Mental Hos. 57
Reaside, Adelphi..... 62
Ruebury Sanatorium, Northallerton.. 62
St. Andrew's Hospital, Northampton. 57
St. George's Retreat, Burgess Hill .. 56
St. Luke's Hospital for Mental Diseases 56
Springfield House Private Asylum, Bedford 57
Stocker, Craven-street, ... 62
Stuetton House, Church Stretton 57
The Grange, Rotherham 57
Vale of Clwyd Sanatorium..... 60
Warneford Asylum, Oxford 56
White Hall, South Norwood Hill 56
Wye House, Buxton 57
Yarrow Convalescent Home, broad-stairs 58

FINANCIAL, &c.—
Equitable Reversionary Interest Soc.. 55

HEALTH RESORTS, BATHS, &c.:—
Aix-la-Chapelle 62
Arosa 61
Cheltenham Spa 62
Clifte Bydo, Ilfracombe 56
Smedley's, Matlock 56

HOTELS —
Hotel Angst 61
Hotel Imperial, Mentone 61
Hôtel National, Montreux..... 61
Hotel Windsor 61
Meyer's Park-Hotel 61
White Hart Hotel, Margate 56

HOUSE & ESTATE AGENTS:—
Bedford & Co., Wigmore-street 68
King & King, Portsmouth..... 68
Elliott, Son & Boyton, Vere-street .. 68
Ley Clark, Wimpole-street 68
Scott & Nock, Newport 68
CONSULTING-ROOMS:—
No. 116, L.O., Strand..... 68
12, Upper Berkeley-street 68

LIFE & FIRE ASSURANCES:—
General Life Assurance Co. 55
National Provident Institution 55
Prudential 55

MASSAGE:—
Gilbert, Welbeck-street 67
London School of Massage 64

MEDICAL ACCOUNTANTS, &c.—
Turner 68

MEDICAL AGENTS:—
Athertons, Limited 72
Blundell & Rigby 70
Fleldhall, Limited 70
Manchester Clerical, &c., Association. 70
Medical Agency 70
Needes, Messrs. 70
Needes, J. C. 72
Peacock & Smedley 70
Scholastic, Clerical, &c., Assoc 71
Turner 68

MEDICAL SCHOOLS:—
(LONDON.)
Central London Ophthalmic Hospital 51
King's College 52
London School of Clinical Medicine .. 51
Medical Graduates' College and Polyclinic 50
West London Post-Graduate College.. 50

NURSING INSTITUTES:—
Army and Navy Male Nurses Co-operation 54
General Nursing Association 54
Hospital for Sick Children, Great Ormond-street 54
Leeds Trained Nurses' Institution... 55
London Nurses' Association 55
Male Nurses Temperance Co-operation 55
National Hospital Male Nurses' Association 54
New Mental Nurses' Co-operation.... 55
Nurses' Co-operation, Portland-place. 55
St. Bartholomew's Hospital Nurses' Institution..... 54
St. John's House 54
St. Luke's Hospital, E.C. 55
Temperance Association of Male Nurses, Ltd. 54
Temperance Male Nurses Co-operation 54
Temperance Male and Female Nurses Co-operation..... 54
The Retreat, York 53

OFFICIAL NOTICES:—
Cancer Hospital Clinical Lectures.... 50
City of London Lying-in Hospital ... 52
Hospital for Sick Children..... 51
King's College 52
London Hospital 51
London Hospital Medical College .. 52
Medical Graduates' College, &c..... 50
Queen Charlotte's Lying-in Hospital. 52
Royal Hospital for Diseases of Chest . 51
Royal Institute of Public Health 52
Royal Society of Medicine .... Cover 1
Throat Hospital, Golden-square 51
University of Cambridge 52
University of London 52
University of Manchester 52
West End Hospital for Diseases of Nervous System 52

PARTNERSHIPS & PRACTICES:—
Arnold & Sons, Giltspur-street 67
Athertons, Ltd., Chancery-lane..... 67
Brooks, Balham 67
Dr. T., Brighton 67
Lee & Martin, Birmingham..... 67
Manchester Medical, &c., Association 67
No. 115, L.O., Strand..... 66
No. 120, L.O., Strand..... 68
No. 121, L.O., Strand..... 67
No. 122, L.O., Strand..... 66
No. 1026, L.O., Strand 66
Peacock & Smedley, Craven-street .. 67
Turner, Adam-street 67

RAILWAY & STEAMSHIP CO.'S:—
New Zealand Shipping Co. 55
R.M.S.P.—
Winter Cruises 55

TUTORS & LECTURERS:—
Bartlett..... 67 | No. 107, L.O. .. 53
F.C.S. Assn. 56 | No. 115, L.O. .. 50
Fellowships .. 53 | No. 119, L.O. .. 50
Med. Corres. Coll. ..... 52 | Schnelle 7
Weymouth .. 50, 53

For Index to Trade and Miscellaneous Advertisements see page 4.

The Horace Dobell Lectures
ON
INSECT PORTERS OF BACTERIAL INFECTION.

Delivered at the Royal College of Physicians of London, November, 1912,

BY CHARLES J. MARTIN, D.Sc., M.B. LOND., F.R.S.,
DIRECTOR OF THE LISTER INSTITUTE OF PREVENTIVE MEDICINE; PROFESSOR OF EXPERIMENTAL PATHOLOGY IN THE UNIVERSITY OF LONDON.

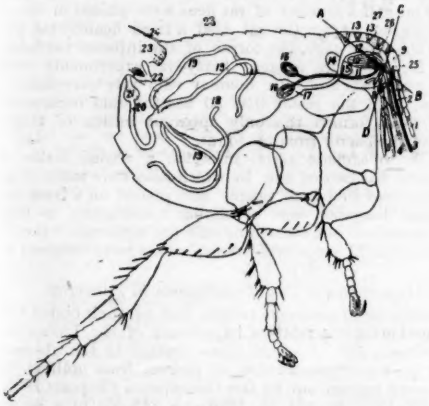
LECTURE II.[1]

THE TRANSMISSION OF PLAGUE BY FLEAS.

MR. PRESIDENT AND GENTLEMEN,—May I remind you that bubonic plague is not an infectious disease? The patient is a negligible source of danger to his surroundings, provided he does not develop a secondary pneumonia. The reason is that even if the excreta do contain some plague bacilli, there is no mechanism available to convey them into a second human being, as pest is not easily contracted by feeding. From an epidemiological point of view bubonic plague must be regarded as a disease of rats, in which under suitable conditions the infection spreads from rat to man.

It would be impossible for me to put before you this afternoon the mass of evidence for the above statements. I have already surveyed it in opening the discussion on the spread of plague at the meeting of the British Medical Association at Birmingham in 1911 (Martin, 1911), and, moreover, it is now well known.

FIG. 13.



Diagrammatic mesial sectional view of *Xenopsylla cheopis* (from Report of Commission for Investigation of Plague). 1, Maxillary palp. 2, Maxilla. 3, Epipharynx. 4, Mandibles. 5, Labium. 6, Undivided portion of labium. 7, Basal portion of labium. 8, Basal portion of mandibles. 9, Salivary pump. 10, Hypopharynx. 11, Salivary duct. 12, Aspiratory pharynx. 13, Muscles operating the aspiratory pharynx. 14, Supracesophageal ganglion. 15, Subœsophageal ganglion. 16, Salivary glands. 17, Gizzard. 18, Stomach. 19, Malpighian tubules. 20, Rectum. 21, Rectal glands. 22, Claspers. 23, Pygidium. 24, Antepygidial bristle. 25, Termination of dorsal contour of epipharynx. 26. Mouth. 27, Ligament.

It was difficult to explain how the bacillus was transferred to man from the rat, especially as man to man infection had been shown to be negligible. On epidemiological grounds Ogata (1897), Simond (1898), and Ashburton Thompson (1900) came to the conclusion that the agent must be some form of insect, and for various reasons choice fell upon the flea. You will naturally inquire why, if the flea is to be considered an agent of transmission from rat to man, does it not transmit from man to man? The answer is quite satisfactory, but I will, with your permission, postpone it until we have considered the case for carriage from rat to man.

[1] Lecture I. was published in THE LANCET of Jan. 4th, 1913, p. 1.

If the blood of the animal contain a sufficiency of plague bacilli, some will obviously be taken in by a flea whilst feeding, and Ogata (1897) found that crushed fleas taken from a plague-infected rat produced the disease when injected into mice. This experiment was repeated with success by Simond (1898) and Tidswell (1900).

The Mechanism by Means of which the Flea might Infect a Healthy Animal.[2]

The blood is sucked up from the wound made by the pricker. This structure is composed of three parts, the epipharynx and the two mandibles (Fig. 14 (5, 10, 10')). The

FIG. 14.

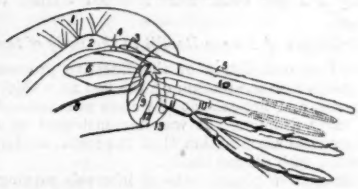


Diagram of the mouth parts of the flea (from Report of Commission for Investigation of Plague). 1, Muscles operating aspiratory pharynx. 2, Aspiratory pharynx. 3, Mouth. 4, Ligament. 5, Epipharynx. 6, Hypopharynx and muscles operating salivary pump. 7, Salivary pump. 8, Salivary duct. 9, Basal element of mandible. 10, Mandible. 11, Labium. 12, Basal element of labium. 13, Perioral ring. The thickness of the epipharynx and mandibles and the distance apart of these three instruments is exaggerated. In reality they are apposed and form together the channel through which the blood is sucked.

apposition of the three forms a fine tube, shown in cross section in Fig. 15, up which the blood is drawn and passed down the gullet into the stomach by successive waves of contraction from before backwards of the muscles actuating the chitinous pharynx (Fig. 14). The stomach is a pear-shaped organ occupying a considerable part of the abdomen of the insect. The internal economy of a flea and the arrangements of the mouth-parts may be gleaned from the diagrams (Figs. 13, 14, and 15), which are borrowed from the reports of the Commission.

The average capacity of a rat flea's stomach was found by the Commission for the Investigation of Plague in India (Report 1907, p. 397) to be 0·5 c.mm., and the number of bacilli in the blood of a plague-infected rat before death

FIG. 15.

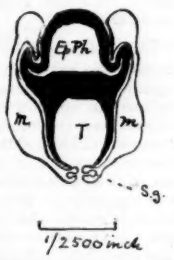


Diagram of transverse section of the piercing organ of the flea. EP PH, The black part beneath these letters is the epipharynx. M, Mandibles. T, Tube through which blood is sucked. SG, Salivary gland.

anything up to 100,000,000 bacilli per cubic centimetre. If, therefore, a rat flea imbibed the blood of such a rat it would receive into its stomach 5000 germs.

Evidence of Multiplication of Bacilli in the Stomach of the Flea.

The Commission fed fleas on plague-infected rats until the death of the latter, and afterwards on healthy animals, a fresh animal being supplied each day. Each day a number of the fleas were dissected, and the stomach contents were

[2] In dealing with the agency of fleas in the spread of plague, I shall draw largely upon the work accomplished during the last few years by the Commission for the Investigation of Plague in India, with which I have had the honour to be associated. The reports of the Commission have been published as special numbers of the Journal of Hygiene, 1906 to 1912.

examined as to the presence or absence of plague bacilli. In 5 to 30 per cent., according to the time of year, plague germs were found up to the sixth day, and in one instance on the twentieth day (Reports 1907, pp. 398–405). The bacilli were often present in immense numbers, far more numerous than ever seen in blood, and massed together as in a culture. We have good evidence in this observation that multiplication of plague bacilli may take place in the flea's stomach.

During the season of the year when the epidemic occurs the proportion of infected fleas for the first four days after removal from the plague rat was 43 per cent., on the sixth day there were 15 per cent., on the eighth day 16 per cent., and on the twelfth day 9 per cent. In the non-epidemic season only 5·2 per cent. were infected during the first six days.

The Distribution of Plague Bacilli in the Body of the Flea.

The blood on completion of the digestive process in the stomach passes into the rectum of the flea as a thick, slimy, dark-red mass, and appears at the anus as minute, dark red or black, tarry droplets. It was demonstrated by cultural and microscopical examination that the rectal contents were often crowded with plague bacilli.

Fleas, taken from plague rats at intervals varying from a few hours to several days, were dissected and the various parts of the body examined for the presence of bacilli. In not a single instance were any plague bacilli observed outside the organs already mentioned. No infection of the body cavity was seen, and, although particular attention was paid to the salivary glands, nothing at all resembling a plague bacillus was ever detected in them.

How the Flea may Transmit its Infection to the Healthy Animal.

Several methods of transmission are possible, such as (*a*) the animal eating the infected fleas; (*b*) the mechanical conveyance of the bacilli by the pricker; (*c*) the regurgitation of the stomach contents down the pricker; (*d*) the deposition of the fæces on the skin, the bacilli being subsequently rubbed in by scratching.

This last method is the only one which has been proved capable of bringing about infection. A well-fed flea deposits a considerable amount of fæces in a surprisingly short time, and it was proved by both the Commission for the Investigation of Plague in India (Report 1907, p. 418) and Verjbitski (1904) that wounds made by the pricker might afford a sufficient avenue for the entrance of bacilli when liquid containing them was gently applied to recent bites.

Whilst, however, experiments have shown that infection may be brought about in this way, the possibility of infection by a regurgitation from the stomach preliminary to sucking blood cannot be excluded.

Proof that Plague is Carried from Animal to Animal by Fleas.

Simond (1898) infected one rat from another by placing them in a bottle together with 20 fleas. The second, uninfected, rat was enclosed in an iron box with a grating, so that the two animals could not come into contact.

Gauthier and Raybaud (1902–1903) repeated Simond's experiments under better controlled experimental conditions. They employed a cage, divided in the middle by two wire grills 2 cm. apart, placed in a glass jar. In one compartment was placed an inoculated white rat on which had been deposited a dozen fleas captured upon rats from ships in the harbour at Marseilles. When the inoculated animal died a healthy rat was placed in the second compartment, and after some hours had elapsed, during which the fleas transferred themselves from the dead to the living animal, the cadaver was removed. Gauthier and Raybaud succeeded five times in conveying the infection from one rat to another; the number of negative experiments is not stated. An examination of the stomachs of the fleas found upon the septicæmic animals showed the presence of *B. pestis*. The fleas used in their early experiments were not identified. Tidswell (1903) made further attempts to convey plague from rat to rat by the agency of fleas, but was unable to do this.

Verjbitski (1904) carried out an extensive series of experiments on the flea-transmission of plague in St. Petersburg. He showed that the plague bacilli could be recovered from the stomach contents of fleas six days after they had fed on plague rats, and that the fæces of such fleas contained the *B. pestis* for about the same time. He succeeded in infecting rats with fleas from diseased rats 15 times in 76 experiments. In each experiment 10 possibly infected fleas were allowed to feed on the rat. Verjbitski also made experiments similar to those of Gauthier and Raybaud described above, and out of 40 experiments, using 10 fleas apiece, infection was conveyed in 4.

Liston (1905) pointed out that the common flea infesting rats in India was not *Ceratophyllus fasciatus* or *Typhlopsylla musculi*, as in Europe, but a non-pectinated flea identified by Rothschild as *X. cheopis*. Liston observed multiplication of the plague bacillus in the stomach of this flea. Although his experiments on transmission, which were made by allowing fleas to bite first an animal suffering from plague and subsequently a healthy animal, were not successful, he brought forward much interesting and valuable circumstantial evidence in favour of the view that plague is epidemiologically thus spread. He showed that *X. cheopis* takes readily to another host — e.g., guinea-pigs and man — when rats are not available.

The possibility of the rat flea carrying plague from one rat to another was demonstrated in a considerable series of experiments by the Commission for the Investigation of Plague in India (Reports, 1906, pp. 435–50). A glass case was used containing two wire cages side by side, each standing in a tin tray which collected the urine. Both trays were filled with sand, in order to provide dryness and shelter for the fleas. Each cage was furnished with a lid through which the rats were introduced, and food and water given to them, and the whole apparatus was covered in with fine muslin to prevent the escape of the fleas. A rat placed in one of these wire cages could not come in contact with a rat in the other cage, nor with its urine or fæces.

The method of experiment is as follows. A plague-infected rat and a number of rat fleas were placed in one of the wire cages. After the rat died a fresh healthy rat was put into the other cage, the corpse of the infected rat being left in for 24 hours longer. Sixty-six experiments with English white rats and with Bombay wild rats were done in this way, with the result that 30 healthy rats contracted plague; fleas formed the only apparent means of transmission of the bacilli from rat to rat.

In order to exclude aërial infection a second series of experiments was carried out, in which fleas were taken from a rat which had died from plague and placed on a fresh rat in a clean flea-proof cage of similar construction to that already described, but containing only one wire cage. Out of 38 experiments 21 successful transmissions were obtained in this way.

The Importance of Flea Transmission in Epizootics.

The following experiments, which had as their object the determination of the relative importance of the Indian rat flea *X. cheopis*, and of actual close contact in the absence of fleas in the dissemination of plague from animal to animal, were carried out by the Commission (Reports 1906, pp. 450–67, 1907, pp. 421–36, 1910, pp. 315–35) in a series of small cabins, which were built especially for this purpose. In these animal houses plague-infected animals, rats or guinea-pigs, were kept in close contact with healthy animals. They ran about together in a confined space, and ate out of the same dishes. The plague-infected animals were allowed to die, and the corpses were not removed until some time after death. In some instances the concentration of infection was very great, in one case 21 infected animals being at one time in contact with 25 healthy ones. The cabins were never cleaned out, so that the animals ate food contaminated with the fæces and urine of their infected companions. In the experiments with rats, the healthy frequently ate the carcasses of the infected ones introduced.

Sixty-six series of experiments were carried out, each involving about 40 to 70 animals. In 35 experiments fleas were present and 31 were control experiments in which no fleas were introduced. In all the control experiments not one of the healthy animals contracted plague, whereas in those cases where fleas were present an epizootic occurred, varying in extent and rate of spread according to the number of fleas present.

Some interesting experiments (Reports 1906, p. 461) were also carried out in the animal houses that had been used for some of the previous experiments. Guinea-pigs and monkeys were introduced into them for one night. Some of the animals were in cages placed on the floor, and others in

cages covered by fine muslin gauze, or surrounded by a layer of sticky fly-paper, 6 in. wide—that is, the simplest precautions were taken to exclude fleas. Of 13 unprotected monkeys six died, of protected none. Of 24 unprotected guinea-pigs 18 died, of protected none. The animal houses remained infective three weeks after the last animal had died from plague. This period corresponds with the maximum time fleas fed on a plague rat have been shown to remain infective when placed on a series of healthy animals.

Experiments in Plague Houses.

The Commission subsequently (Reports 1906, pp. 467–82, and 1907, pp. 436–46) repeated similar experiments in plague houses in Bombay. The infectivity of 142 houses where cases had occurred or rats had died was tested by placing a guinea-pig there overnight. The guinea-pig was subsequently segregated, and in 31 cases it died from plague.

Experiments were made in which two similar animals—monkeys, guinea-pigs, or rats—the one protected by gauze or sticky paper, the other not protected, were placed in suspected houses. Of 92 experiments, 15 unprotected animals died, none of the protected.

On 96 occasions fleas taken off guinea-pigs which had spent the night in a suspected house were transferred to a healthy animal. In 26 cases the second animal died from plague, although not infrequently the guinea-pig from which they had been removed escaped infection. The conclusion that in a plague-infected house the infection is due to infected rat fleas, and not to an infection of the soil or the air, seems to me abundantly justified.

Fleas as the Agents of Transmission from Rat to Man.

In considering how far the results just detailed can be applied to man we enter at once upon less secure territory, because it is impossible to put conclusions to the test of experiment. The only measure of the correctness of such an interpretation is its adequacy to interpret all the known epidemiological facts concerning the spread of plague.

The justice of applying the results of these animal experiments has been severely criticised in several quarters, and particularly by Galli-Valerio (1907), on the ground that rat fleas do not bite man. It is true that, speaking generally, different animals harbour specific parasites; but the more we learn upon this subject the clearer it becomes that such specificity is not so sharply defined as was imagined, and that a particular flea, although commonly confined to a few hosts of allied species, may frequently be found in considerable numbers upon quite different animals. Moreover, it has become abundantly clear that a flea, although exhibiting a decided preference for one species, will, if hungry, betake itself to animals of widely different type in the absence of its proper host.

The common flea found on rats in India and other warm parts of the world [3] is *X. cheopis*. This flea is a non-combed species, and not unlike the human flea *Pulex irritans* in appearance. That *X. cheopis* readily feeds on man was observed by Tidswell (1903), Gauthier and Raybaud (1903), and Liston (1905). The Commission for the Investigation of Plague in India kept *X. cheopis* alive for four weeks upon an exclusively human diet, and my colleague, Mr. Bacot, has bred them for years on the same regimen.

With regard to the readiness with which *Ceratophyllus fasciatus*, the common rat flea in Europe, attacks man, considerable divergence of opinion has hitherto existed. According to Wagner (quoted by Tiraboschi 1904, p. 180), Tiraboschi (1904, p. 266), and Galli-Valerio (1907), this flea does not bite man. On the other hand, Gauthier and Raybaud (1903 and 1909), and McCoy and Mitzmain (1909) found that when hungry it fed on man with readiness.

Dr. Harriette Chick and I (1911) have made some hundreds of experiments on this question, and are at a loss to understand the negative conclusions arrived at by Tiraboschi and Galli-Valerio. Under the conditions of our experiments *Ceratophyllus fasciatus* fed upon man as readily as upon a rat. (Table III.) Nevertheless, it is doubtful whether *Ceratophyllus fasciatus* is attracted to man as readily as is *X. cheopis*. Compared with the latter, it is a poor jumper.

We also made 107 experiments with *Ctenopthalmus agyrtes*, a flea common on *Mus decumanus* in this country, when living in fields, ricks, or barns, and 122 experiments with the mouse-flea *Ctenopsylla musculi*. Under the conditions of the experiment the former would not bite man at all, and the latter only very occasionally. This latter experiment is interesting, because mice, although dying from plague, have not been found to be associated in the same way as rats with the origin of plague epidemics.

[3] Distribution of rat fleas has recently been dealt with by Dr. Chick and myself in the Journal of Hygiene, vol. ii., p. 129, 1911.

TABLE III.—*Showing Results of Feeding Experiments with Ceratophyllus Fasciatus.*

—	Subject.								Summary.	Rat.	Rabbit.
	C. J. M.	H.C.	A.M.	J. H. S.	H. Y.	G. F. P.	H. W. A.	S. R.			
Total number of experiments	161	118	39	33	52	51	40	23	517	101	32
Positive	106	65	30	12	36	25	19	15	308	59	23
Negative	55	53	9	21	16	26	21	8	209	42	9
Per cent. positive...	65·8	55·1	76·9	36·4	69·2	49·0	47·5	65·2	59·6	58·4	71·9

The Capability of Flea Transmission to Interpret the Epidemiological Facts Regarding Bubonic Plague.

(1) Poverty, dirt, storage of grain in the bedroom, accumulation of refuse, and insanitary conditions generally, have been shown to be effective in so far as they lead to the support of a large rat population in close association with human beings. All these conditions also increase the population of rat fleas, and man's accessibility to them.

(2) In 75 per cent. of cases the situation of the bubo is such that the bacillus must have obtained entry at some superficial area of the body. This is also consistent with infection by fleas.

(3) A number of instances have occurred during the last ten years in India in which the introduction into a distant village of the effects of a person dead from plague has been followed, after an interval of about a week, by mortality amongst the rats, and subsequently by an epidemic of plague. The same sequence has also taken place after the visit of an individual who had worked or resided in a house where some of the inmates had suffered from plague, although the stranger himself did not suffer from the disease. These observations are better explained on the assumption that the infection was transported in the bodies of fleas contained in the clothing or upon the person of the stranger than by any other suggestion that has been put forward, for at the earliest opportunity rat fleas would betake themselves to the rats, and could thereby start an epizootic. That such transmission of rat fleas does actually happen has been proved by the Commission for the Investigation of Plague in India, members of which frequently carried away rat fleas upon their persons and clothing when visiting native quarters in the course of their scientific duties.

(4) Perhaps the most striking feature of epidemics of bubonic plague is the marked seasonal prevalence of the disease amongst rats and amongst men. In places where it is endemic the epizootic followed by the epidemic starts at or about the same time each year, grows, declines, and finally more or less disappears. As one passes away from the Equator the plague season becomes later. In Bombay the height of the epidemic is in March, in Lahore in April, in Jhelum in May, in Rawal Pindi in June, and further north in July, August, and September. The epidemics of London in 1665, and of Marseilles in 1720, reached their maximum in September. The effect of latitude in determining the season when plague flourishes is analogous to that upon the flowering and seeding of a plant, and indicates dependence on some biological factor. Within the Tropics, where temperature variation is less, and the seasons are determined by the prevailing winds and rainfall, the epidemic season is also well defined, but varies in different localities.

The seasonal incidence of plague is not due to any periodicity in the breeding of rats. In India, in localities where the latter was investigated, it bore no relation to the season when plague occurred. It was found by the Commission (Reports, 1908, p. 266, and 1910, pp. 446 and 483), however, that the epidemic season coincided with the

period of greatest flea prevalence. In Bombay, Belgaum, Poona, and two Punjab villages the Commission undertook a census of rat fleas upon captured rats, in the course of which the fleas on 150,000 rats were recorded. In each case the observations extended over more than one year. The analysis of the figures showed a seasonal variation in the number of rat fleas in all the localities. The average number per rat varied in Bombay between 3 and 7, in Poona between 2 and 11, in the Punjab between 2 and 12, and in Belgaum between 1 and 17. The interesting point is that in all the places examined plague is epidemic when the average number of fleas is well above the mean, and the height of the epidemic corresponds fairly closely with the season of maximal flea prevalence. A similar seasonal variation in the prevalence of *X. cheopis* and correspondence between the maximum of these fleas and the epidemic period has been observed by Kitasato (1909) in Japan, Tidswell (1910) in Sydney, and by Gauthier and Raybaud (1910–11) at Marseilles, and by Andrew (1911) in Tongschang in Northern China. The incidence of the epidemic period in the season of greatest flea prevalence under such different climatic conditions as obtain in Bombay, the Punjab, Poona, Tongschang, and Marseilles is in itself suggestive, and, in view of the results of animal experiments already referred to, one is justified in believing that the most favourable time for the epidemic is largely determined by the seasonal prevalence of rat fleas.

(5) The rat-flea hypothesis also affords an interpretation of the fact that epidemics decline when the mean daily temperature passes 85° F. A mean temperature of 85° F. in India means also dry weather. Fleas, whether in the larval, pupal, or imago state, are rapidly killed off at this temperature unless associated with a high degree of humidity.

The Commission for the Investigation of Plague in India found that in Bombay the proportion of fleas which become infected, the time they remain infected, and the number of successful experiments on flea transmission was greatest during the winter months (Reports, 1907, pp. 197–204, 1908, pp. 510–15 and 529–38). An analysis of their results showed 67 per cent. successful transmissions when the temperature was 73° to 78° F., against 14 per cent. successes when the temperature was 82° to 85° F. Transmission experiments were therefore carried out simultaneously at 70° and at 85° F., in suitable chambers, both upon rats and guinea-pigs. The results were consistent with previous experience. The possibility that the virulence of the bacillus might undergo some variation if grown at one or other temperature was examined by the Commission and excluded.

The claims of flea transmission to be the predominating mechanism of spread from rat to man may be briefly summarised as follows:—

1. The experimental evidence that plague is easily transmitted from animal to animal by rat fleas.

2. That in presence of fleas, the epizootic, if started, varies as regards severity and rate of progress with the number of fleas present and the season of the year, whereas all attempts to induce epizootics in the absence of fleas have failed.

3. That under natural conditions (experiments in plague houses, &c.) an animal can be protected from infection by any simple procedure which will exclude the visits of fleas.

4. The only discovered infection in plague houses resides in plague-infected fleas.

5. The rat fleas *X. cheopis* and *Ceratophyllus fasciatus* readily bite man.

6. The conclusions drawn from animal experiments, when applied to the problem of the spread of plague amongst human beings, afford a reasonable interpretation of every cardinal epidemiological fact.

The Part taken by the Human Flea.

It is possible to transmit plague experimentally by means of *P. irritans*. Nevertheless, the direct transmission of the disease from man to man cannot, at the present time, be of frequent occurrence, or we should have evidence of direct infection instead of dependence upon the epizootic.

The reason why the human flea is ineffective is because in human cases the average degree of septicæmia before death is so much less than in rats that the chance of a flea imbibing even a single bacillus is small. A variation of the plague bacillus in the direction of greater infectivity, with perhaps diminished toxicity leading to a higher degree of septicæmia in man, would permit of direct transmission by human fleas. Bubonic plague would then be independent of the rat, and spread directly from man to man. For several reasons it seems to me not improbable that this may have happened in the plague of the Middle Ages.

OTHER DISEASES TRANSMITTED BY INSECTS.

Three other diseases which can be transmitted by insects—typhus, relapsing fever, and poliomyelitis—must be mentioned, although I am not sure that I am justified in including any of them under the heading "bacterial." The infective agent in typhus has so far not been isolated, but it is ascertained that it is an organism capable of propagation, for Nicolle (1910) and Wilder (1911) have succeeded in carrying the disease through a number of generations of monkeys by inoculating them with 1 to 5 c.c. of blood or serum from an infected animal. The organism is held back by Berkefeld and porcelain filters. It is therefore free in the blood and of some considerable size.

Relapsing fever is caused by a spirochæte, and there is considerable difference of opinion as to whether spirochætes should be classed amongst the bacteria or protozoa.

The infective agent of poliomyelitis is a minute invisible organism which passes readily through a porcelain filter, so that it escapes the clutches of the systematist altogether.

THE TRANSMISSION OF TYPHUS FEVER BY LICE.

Typhus is a disease associated with poverty and dirtiness. It occurs in temperate climates and mostly in the winter and spring. In warm climates it is uncommon. In Mexico, where it still flourishes amongst the poor Indians and half-caste population, it is confined to the central plateau 4000 to 10,000 feet above the level of the sea, and does not affect the population of the lower hot country, although cases are frequently introduced from the higher lands.

Typhus has been shown to be capable of transmission by the agency of body lice, *Pediculus vestimenti*, by Nicolle, Compte, and Conseil (1909), and by Ricketts and Wilder (Wilder, 1911).

The Bionomics of Lice and the Mechanism by means of which they might Carry Infection.

The life-history of the body louse has recently been studied by Warburton (1909), to whom and to my colleague, Mr. Bacot, I am indebted for most of the following facts on the subject. Unlike fleas, lice have no grub stage. The eggs take one to five weeks or longer to incubate, according to temperature. The young louse when just hatched is a small edition of the parent and sucks blood at the earliest opportunity. It is, however, not sexually mature; three moults occur, in about 14 days its growth is complete, and the insect is sexually mature. The females lay 100–200 eggs. Lice, especially when young, are delicate creatures. They are voracious

FIG. 16.

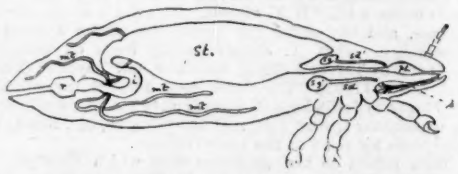


Diagram of the alimentary canal and mouth parts of the louse (Pediculus vestimenti), constructed from dissections by Mr. Bacot. The precise termination of the ducts of the two pairs of salivary glands is at present uncertain, but they can be traced into the base of the sac. PH, Pharyngeal pump. SG, Salivary gland. SD, Salivary duct. P, Pricker. ST, Stomach. I, Intestine. R, Rectum. MT, Malpighian tubes.

feeders, and must be fed at frequent intervals. They, as a rule, are unable to withstand starvation for more than two days. They are very sensitive to heat and drying, and soon succumb at temperatures above 25° C., unless the air be kept nearly saturated with moisture. They live in clothing and bedding, and feed several times in the 24 hours if opportunity be given. The optimum condition for their development occurs in the case of those persons who seldom wash their clothing or change it for sleeping.

The general arrangement of the alimentary canal may be seen in Fig. 16, which also shows the sac in the floor of the mouth which contains the piercing organ. The four salivary

ducts (two only of which are shown) open into the base of this sac. The pharynx is a chitinous organ which collapses by its elasticity, and suction is produced by the contraction of the muscles (*m.*) attached to its dorsal surface and the chitinous skeleton of the cranium. The blood is forced into the stomach by the relaxation in order of these muscles from before backwards. The stomach or crop is a capacious organ with two lateral diverticula from its anterior end.

The body louse obtains its nourishment entirely by sucking blood. It is provided with penetrating instruments, the apposition of which forms a canal through which the blood is pumped into the stomach by a pharyngeal pump similar to that of the flea. These piercing instruments are not permanently exterior to the head and carried tucked away in a labium as in fleas and bugs, but, as described by Pawlovsky (1906), the apparatus is retractile and contained in a special pocket in the floor of the mouth, Fig. 16. The anterior part of the mouth is provided with a ring of hooklets, which is everted when the pricker is thrust out. (Fig. 17, B, *h.*) When the insect feeds the tubular "pricker" (*p.*) is protruded through the mouth and penetrates the skin of the host, and the hooklets serve to attach the mouth to the skin.

The exact way in which the sucking tube is built up is not quite clear, but from preparations made by my colleagues, Mr. Bacot and Dr. Rowland,[4] the arrangement of these parts appears to be as follows. Three elements enter into the formation of the "pricker," each of which is bifurcated at its base (see Fig. 17, A and B). From the dorsal and ventral aspects of two of these parts, just anterior to their bifurcation, a chitinous expansion is given off which runs forward and embraces the finer piercing organs (Fig. 17, A and B, *Ch*). The two together form a sheath round the basal portions of the piercing organs.

The relation of the three elements to one another and how the sucking tube is formed may be seen from Fig. 17, C, which represents a transverse section in the neighbourhood of the line *x-y* in Fig. 17, A. *Ch.* is the chitinous sheath, *a* the dorsal element which we may call the stylet, *b* the median, and *c* the ventral element. The interlocking of the lateral chitinous expansion of *b* and *c* forms the canal (*s.t.*) up which blood is sucked.

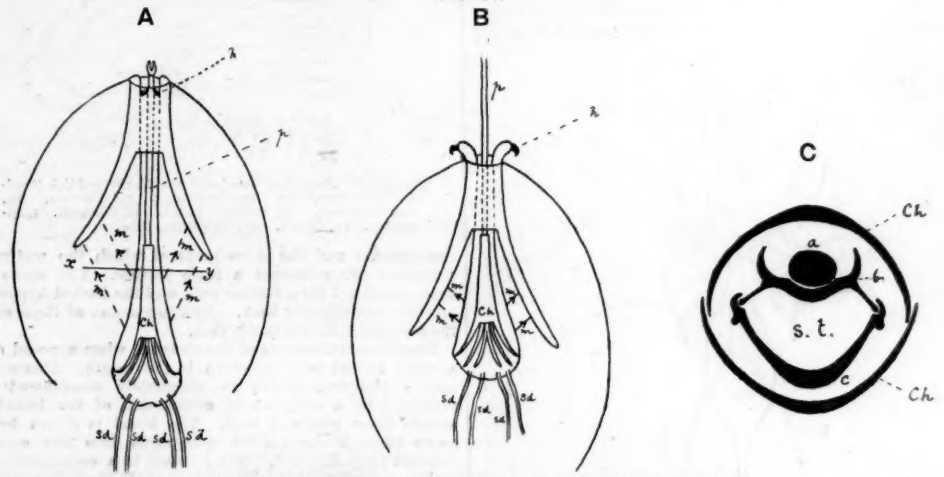
Fig. 17, A, is a diagrammatic representation of the head of a louse with the pricker retracted, B with the pricker extruded; *p.* is the "pricker" made up by the apposition of the three parts mentioned above. Anteriorly these pass through a tunnel in the substantial chitinous piece shaped like an inverted Y, which apparently also forms a skeletal framework for the attachment of the muscles (*m.*, Fig. 17, A and B) which pull the whole organ forward. *Ch.* is the sheath covering the basal portion of the piercing parts. At the base the bifurcation of the three elements is seen, and also the four salivary ducts (*s.d.*) which enter there, but the precise connexion of which has not yet been made out. When the whole organ is pulled forwards it not only drives out the "pricker" but evaginates the lining membrane of the sac and everts the ring of hooklets (*h.*), whereby the head is anchored to the epidermis.

[4] I am greatly indebted to Mr. Bacot and Dr. Rowland, not only for lending me specimens of the mouth parts of the louse, but also for their kindness in making fresh dissections for the purpose of this lecture. The mechanism of the sucking apparatus of the louse is much more difficult to comprehend than that of the flea or bug, and the description given merely represents the conclusions I have been able to arrive at without a prolonged study of the intricate arrangement of the organ.

Summary of the Position with Regard to the Transmission of Typhus by Lice.

1. The infection of typhus circulates in the blood during and for some time after the febrile period.
2. It is taken up by lice when they feed upon a patient and may be transmitted to monkeys by them.
3. As in the case of fleas and plague, a considerable number of insects, 10 or more, is required to give a reasonable chance of infection to a monkey, an animal which is probably much less sensitive than man.
4. There is reason to believe that the virus proliferates inside the insect, for in order to produce infection by means of blood taken from a patient, the volume required is much larger than could possibly be contained in the lice employed (Wilder).
5. The infectivity of lice endures seven days, and seems to be greater some days after feeding on a typhus patient than immediately (Nicolle and Wilder), but the number of experiments so far performed is not adequate to establish this.
6. There is reason to believe that the infection may be transmissible to a second generation of lice (Wilder).
7. The present limitation of outbreaks of typhus to the most vermin-infested section of the population, its occurrence at a period of the year when the clothing is rarely removed from such persons, and washing of either takes place at considerable intervals, and the practical limitation of the disease to cold climates, all receive ready interpretation on the assumption that lice are essentially the porters of infection.
8. Further support is provided by the non-infectivity of typhus under modern hospital conditions and the success attending prophylaxis directed towards the extermination of insect parasites, and I am unaware of any epidemiological fact inconsistent with the view that lice carry the infection.

FIG. 17.



Diagrammatic representation of the head of a louse. A, With pricker retracted. B, With pricker extruded. C. Transverse section. P, Piercing organ. CH, Chitinous sheath round base of piercing organ. A, B, C, Dorsal, median, and ventral elements composing piercing organ. ST, Sucking tube. H, Hooklets. M, Muscles of piercing organ. SD, Salivary duct.

THE TRANSMISSION OF AFRICAN RELAPSING FEVER BY THE TICK ORNITHODOROS MOUBATA.

Relapsing fever is widely distributed about the world, and was at one time very common in this country. In 1868 Obermeier discovered the presence of spirochætæ in great abundance in the blood of patients during the febrile attacks. These were subsequently shown to be the cause of the disease. In 1905 Dutton and Todd (1905) in the Congo

and Koch (1905) in German East Africa discovered that the tick fever of Africa was relapsing fever, and that the spirochæta was conveyed from patient to patient by the tick *Ornithodoros moubata*.

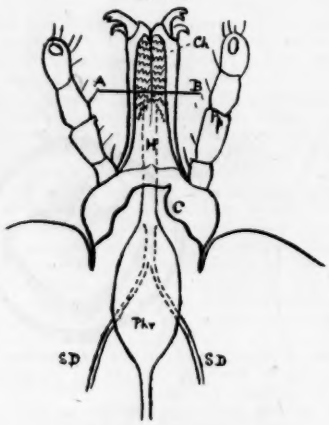
Bionomics of Ornithodoros Moubata.

These ticks are common in the native caravan routes. The adult feeds several times and lives a long time. They are very hardy insects, and can endure many months without food both in the larval and adult stages. In their habits they more resemble the bed bug than the majority of the Ixodes; during the day they hide in the earth of the floors or in crevices in the walls and roofs, and at night emerge to feed upon the occupants. The female lays several broods of some hundreds of eggs in crevices of the ground. Incubation lasts from eight days to two months, according to temperature. The first moult occurs within the egg. The young larval ornithodoros somewhat resembles its parent, has four legs, but undeveloped sexual organs. It feeds upon blood, moults a few times, after which it is a sexually mature insect.

The number of infected ticks along the caravan routes of German East Africa is considerable. Koch (1905, 1906) found 5 to 15 per cent. contained spirochætæ, and in one instance 50 per cent. of the ticks collected from a particular locality contained spirochætæ.

Ticks, once infected, may retain the infection and transmit it to their progeny, for Dutton and Todd (1905) and Koch (1905–1906) found that young ticks raised from the egg were infective. Möllers (1908) further discovered that the second generation from infected ticks were also capable of giving

FIG. 18.



Section across AB above

Diagram of mouth parts of tick. Ventral portion of capitellum removed. PP, Pedipalps. CH, Cheliceræ. H, Hypostome. C, Capitellum. PHR, Pharyngeal pump. SD, Salivary ducts. M, Tube leading to mouth.

rise to relapsing fever. The same fact was demonstrated by Hindle (1912) for *Spirochæta gallinarum* and *Argas persicus*, the fowl tick. These facts no doubt account for the large proportion which harbour the infection.

The precise mechanism of transmission in relapsing fever is still uncertain. For a few days after feeding on an infected animal Dutton and Todd (1905) and Koch (1905) found the spirochætæ in the alimentary canal of the tick. Subsequently they disappeared from the stomach and gut, but were found by these observers in some of the internal organs, ovaries, Malpighian tubes, and salivary glands.

Leishman (1909), working in London upon a number of ticks sent from Africa, failed to find spirochætæ, although the ticks were capable of infecting monkeys. He noticed, however, that the cells lining the Malpighian tubes contained large numbers of minute chromatin-containing granules, and that similar granules were present in the ovary and eggs of ticks which subsequently gave rise to infective individuals. Ticks in which he failed to find these granules did not give rise to infection.

From these and other observations Leishman was led to the conclusion that the chromatin granules represent a stage in the development of the parasite. These interesting observations have been confirmed by Balfour (1911) in the analogous case of *Argas persicus* and fowl spirochætæ. Some experiments by Hindle (1911) also have a bearing upon this point. Hindle failed to find any spirochætæ in infected ticks kept some time at 21° C., but similar ticks warmed up to 35° C. for a few days showed spirochætæ throughout the body and at the same time all the organs were infective.

The Structure and Arrangement of the Mouth Parts and Alimentary Canal of Ornithodoros Moubata.

The general arrangement of the mouth will be seen from the diagram. (Fig. 18.) The boring instrument or rostrum consists of three parts, two cheliceræ (*ch.*) and a ventral hypostome (H.). The cheliceræ are hollow chitinous organs, inside which are muscles which operate the terminal claws; the hypostome is barbed. In the act of boring the claws are

FIG. 19.

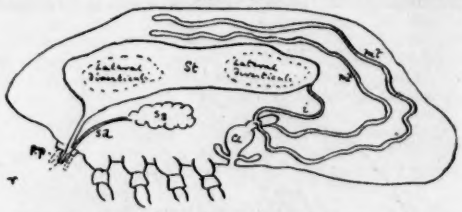


Diagram of alimentary canal and mouth parts of tick (Ornithodoros moubata). PP, Pedipalps. R, Rostrum. SD, Salivary duct. SG, Salivary gland. ST, Stomach. I, Intestine. CL, Cloaca. MT, Malpighian tube.

straightened and the three parts of which the rostrum is composed are advanced a little further. The claws are again advanced for a further pull, and the barbed hypostome prevents any slipping back. By a succession of these efforts the rostrum is buried in the skin.

The three instruments of the rostrum, when apposed, form a canal at the base of which is the mouth. This widens into a pharynx, which is alternately compressed and expanded by a coördinated contraction of the individual muscle fibres attached to it. The blood is driven by the pump through the narrow œsophagus into the crop or stomach (Fig. 19) (*st.*). The stomach is a capacious pouch having extensive lateral diverticula, which themselves branch so that after a full meal the organ distends the insect. The intestine is a very narrow tube connecting the stomach to the cloaca (*c.*). The anus is not terminal, but opens in the mid-line just behind the last pair of legs. The salivary glands (*s.g.*) are of the compound racemose type, each with one duct (*s.d.*) passing forward to the mouth.

Koch was of opinion that the spirochætæ passed from the salivary glands during the act of sucking, but both Leishman and Hindle consider that the infection is not transmitted by this channel, but that the infective excrement from the Malpighian glands passing out per rectum is washed into the puncture made by the insect by means of the coxal secretion which is deposited during the latter stages of feeding.

THE TRANSMISSION OF THE RELAPSING FEVERS OF EUROPE, AMERICA, AND INDIA.

Whether the spirochætæ which are responsible for relapsing fever in various parts of the world represent distinct species (Novy and Knapp (1906), Uhlenhuth and Haendel (1907)), or merely varieties, does not seem to me proven in view of the observations of Darling (1909) and Manteufel (1908). Anyhow, they are very similar and all can be transmitted by the tick *Ornithodoros moubata* (Manteufel (1908) and Neumann (1909)). It is, however, clear that this tick was not the transmitting agent in Ireland and England, where relapsing fever was common 50 years ago, nor is it so in Russia, America, or India at the present time.

The epidemiology of the disease in these countries is not yet clear. Spirochætæ are such obligatory parasites that the agency of an insect transmitter seems almost necessary. The only certain way of producing the disease is by inoculating a minute quantity of the blood of a patient during the febrile stage. Spirochætæ have been found in the urine, but no one has succeeded in producing infection by this means. It must also be remembered that they can find their way through the unbroken skin.

The distribution of relapsing fever among the population is consistent with the view that insects are necessary, for, like typhus, this disease in Europe is almost confined to the poorest and dirtiest members of the community. It has been frequently suggested that bugs might disseminate the disease; Tictin (1897) and Karlinski (1902) found that the stomach contents of the bed bug remained infective for two or three days after feeding on the blood of a patient; and Kladnitzky (1908) observed appearances strongly suggestive of multiplication of the spirochætæ in the stomach of the bug. With one exception, however, all the numerous attempts to transmit the disease by the bed bug have been unsuccessful. Experiments have also been made with fleas by Sergent and Foley (1908) and others. The results were negative; a further reason for doubting the importance of either of these insects is that the disease is not more prevalent at the time of year when these insects abound, but rather the contrary, for in Europe, although the disease occurred in epidemic form without the latter contracting the disease, and then repeated the experiments with the addition of lice. Two infected rats were caged together with seven healthy ones. The sick animals were killed by ether at the height of the disease and then put back into the cage in order that the lice upon them might crawl off the cadaver and attach themselves to the living animals. Three of the seven became infected. In another similar experiment with *Spirochæta duttoni* one out of eight rats became infected. Manteufel could not find spirochætæ in the louse outside the alimentary canal, nor in the eggs.

These experiments were confirmed by Neumann (1909) so that it seems highly probable that relapsing fever is spread by lice as well as by the tick *Ornithodoros moubata*. Although the former agent may not be nearly so efficient as the latter, it may make up by its greater numbers and persistency.

The details of transmission by lice are still unknown, but from the habits of these insects to freely discharge the contents of their alimentary canal during feeding, and the readiness with which spirochætæ can penetrate uninjured epithelium, it is not difficult to imagine how this may happen, even supposing the salivary secretion does not contain the infection.

TRANSMISSION OF POLIOMYELITIS BY STOMOXYS CALCITRANS.

At the International Congress on Hygiene held in Washington last September, Rosenau announced that he had succeeded in conveying poliomyelitis from an infected monkey to several other monkeys by means of the bites of *Stomoxys calcitrans*, the small biting stable-fly. This observation has recently been confirmed by Anderson and Frost (1912). Three monkeys exposed daily to the bites of 300 stomoxys which had previously fed on two infected monkeys during the whole course of their illness all developed the disease seven to nine days after their first exposure. The observation is of particular interest because hitherto the transmission of poliomyelitis by the subcutaneous inoculation of blood from an infected monkey has been very uncertain even when large quantities of blood have been transferred. It suggests that either the previous experiments have been made at the wrong stage of the disease, or else that the virus multiplies or intensifies in the body of the fly.

The incidence of the disease being summer and autumn is consistent with insect transmission, but the continuance of the epidemic in Sweden after flies had disappeared indicates that there are other means of spread.

FIG. 20.

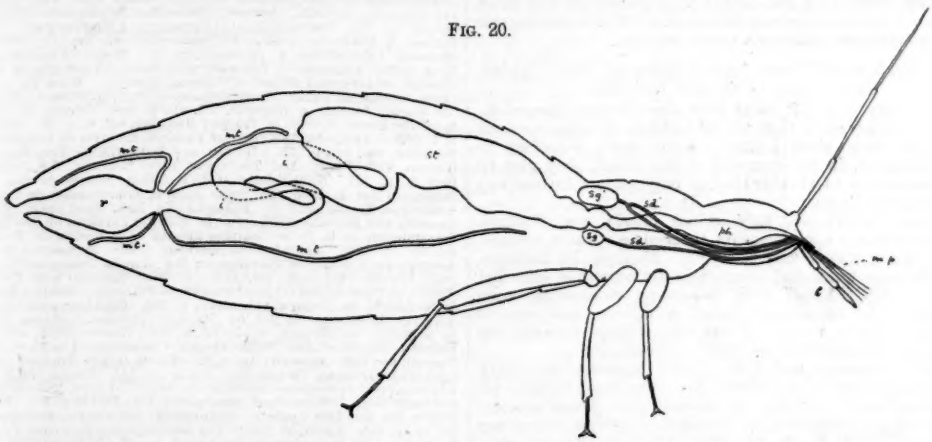


Diagram of alimentary canal and mouth parts of bug (Cimex lectularius), constructed from dissections by Mr. Bacot. MP, Mouth parts (pricker), composed of two maxillæ and two mandibles. L, Labium, in which MP are carried. PH, Pharyngeal pump. SG, Salivary glands. SD, Salivary ducts. ST, Stomach. I, Intestine. R, Rectum. MT, Malpighian tube.

throughout the year, the greatest prevalence was usually during winter and spring.

The only remaining ectoparasites are lice, *Pediculus capitis* and *Pediculus vestimenti*. The general bionomics of these insects has been dealt with, and it only remains to point out that their prevalence is not confined to the warmer months, but is greatest during the winter (Hamer, 1910), when clothes are least changed and washed.

Mackie (1907), in an investigation of an outbreak of relapsing fever in a mission school in India, brought forward some rather striking epidemiological facts pointing to lice rather than bugs as being concerned with the epidemic. He found spirochætæ in 14 per cent. of the lice taken off the boys. They were present in the alimentary canal, ovary, and Malpighian tubes of these insects. From his observations he came to the conclusion that spirochætæ multiplied greatly in the stomach of the insect, reaching their maximum on the third day. Mackie fed lice from the patients upon monkeys, but he failed to transmit the disease.

In two experiments by Sergent and Foley (1910) relapsing fever followed the infection of the clothing by lice from patients.

The spirochætæ of relapsing fever infect rats, and Manteufel (1908) made some excellent observations on the capacity of the rat louse (Hæmatopinuss) to transmit the disease. He first ascertained by 40 experiments that when free from lice sick and healthy rats could be caged together

BED BUGS (CIMEX LECTULARIUS) AS PORTERS OF INFECTION.

The general career of the bed bug is more or less familiar to most people, but it may not be unnecessary to point out that, unlike fleas, there is no larval or pupal stage, but the insect emerges from the egg as a little bug. For the following

facts I am indebted to my colleague, Mr. Bacot, who has made observations on this subject.

The young bug sucks blood on the earliest opportunity, grows and moults, and feeds again. After five moults it is a sexually mature and adult insect. Bugs only visit their host for food, and then preferably at night; they strongly resent light, and during the day hide themselves in some cranny of the room or furniture. They are very hardy, and do not require the constant feeding which is so troublesome in breeding lice and fleas. They can survive without food for six months or more. A bug which has imbibed a good meal retires to some secluded spot and slowly digests it. It is some days before it develops a fresh appetite and sallies forth again in search of prey.

The Arrangement of the Alimentary Canal and Mouth Parts of the Bed Bug.

The general scheme of the alimentary canal will be sufficiently clear from the diagram (Fig. 20). There are two pairs of salivary glands (*s.g.* and *s.g.*[1]), and the duct of the larger or dorsal pair (*s.g.*[1]) bifurcates shortly after it emerges from the gland and both tubes run forward to the base of the piercing organ. The exact way in which the three salivary ducts on each side terminate has not yet been determined. The mouth parts also differ from those of the flea in that the sucking tube is made up by the apposition of four elements instead of three. These are two maxillæ (*mx.*) and two mandibles (*mn.*). When not in use these delicate piercing instruments are carried in a groove on the dorsal aspect of the three-jointed labium (*l.*). Whilst feeding this support is folded backwards under the head.

Experiments on the Transmission of Relapsing Fever, Typhus, and Plague by means of Bed Bugs.

The observations of Tictin have already been referred to. Although these show that the spirochætæ of relapsing fever may live from some hours to many days, according to circumstances, in the stomach of the insect, they give no information as to whether the bed bug can in a natural way transmit the disease.

Christy (1902), M. Rabinowitch (1907), and Shellack (1909) tried the experiment on themselves without success. Their attempts were very thorough. Shellack, for instance, fed 168 bugs, which had been previously nourished on a diet of rat blood infected with *Spirochæta recurrentis*, upon himself. The experiment lasted a month, and was so arranged that a variety of intervals elapsed between the ingestion of infected blood and the second meal.

Breinl, Kinghorn and Todd (1906), Rabinowitch (1907), and Sergent and Foley (1910) have also tried to transmit relapsing fever to monkeys by means of bugs. Large numbers of insects were employed by the former observers, sometimes as many as 590 to one monkey. Their experiments were carried on over two or three months. Bugs which had fed upon an infected monkey at all stages of the disease were used, and the interval between feeding upon the infected and healthy animal varied. Nevertheless, no transmission of the disease occurred.

The only case of successful transmission was one experiment by Nuttall (1907), who removed a bug shortly after it had commenced to feed upon an infected mouse and allowed it to complete its meal upon a normal mouse.

Bed bugs were excluded from consideration as transmitters of typhus by Nicolle (1910) and by Wilder (1911), as the distribution of these insects both in time and space does not coincide with that of typhus. Wilder, however, tried experimentally to convey the disease from monkey to monkey by bugs, but without success.

Verjbitski (1904) made a number of experiments on the transmission of plague by the bed bug. He showed that plague bacilli multiply in the stomach of bugs as they do in that of fleas, and that their virulence was unimpaired. He succeeded in conveying plague to guinea-pigs by the bites of bugs, but only up to four days after they had fed on an infected animal.

There is really no evidence to incriminate the bed bug in the case of either typhus or relapsing fever. It is possible to transmit plague experimentally by means of bugs, but there is no epidemiological reason for supposing this takes place to any extent in nature.

There are two differences in the habits of bugs and those of fleas and lice which may possess epidemiological significance. The first concerns the customary intervals between their meals. Bugs show no disposition to feed for a day or two after a full meal, whereas fleas and lice will suck blood several times during the 24 hours. The second is in respect to the time the insects retain a meal and the extent to which it is digested before being excreted. Fleas and lice if constantly fed freely empty their alimentary canals, and the nature of their fæces indicates that the blood has undergone but little digestion.

Both these insects evacuate such undigested, or half digested, blood per rectum during the act of feeding, and the remnants of the previous meal are thus deposited in the immediate vicinity of a fresh puncture. It is not unlikely that, should the alimentary canal of the insect be infected with plague bacilli, spirochætæ, or the organism responsible for typhus fever, these may be inoculated by rubbing or scratching. Bugs have not this habit, and in all the cases I have examined their dejections were fully digested, almost free from protein, and consisted mostly of alkaline hæmatin.

This is, however, probably not the whole explanation, and there is, I believe, much yet to learn as to the mechanisms of insect transmission, and why one blood-sucking parasite is an effective porter and another not, even in the cases of bacterial infection where no stage in the life cycles of the organism takes place within the insect host.

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TWO CASES OF COLLOID TUMOUR OF THE THIRD VENTRICLE, CAUSING DEATH.

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INTRAVENTRICULAR tumours are relatively rare as morbid specimens; they are still more rarely diagnosed during life. It is desirable that such cases as occur should be recorded in full. The two specimens which form the subject of this paper were shown at the Pathological Section of the Royal Society of Medicine in January, 1911, and at the Pathological Society of Manchester in 1912, but they have not previously been published in detail.[1] Both specimens are from the collection of the pathological museum of Sheffield University.

CASE 1 (Catalogue No. F. 118).—This was obtained from a man about middle age, history and name unknown, who was found lying unconscious in the street and was admitted to the Sheffield Royal Hospital under the care of my colleague, Professor Duncan Burgess. On admission the patient was comatose. Left pupil larger than right; knee-jerks absent; temperature 98·7° F., rising to 105·4° before death. Divergent squint developed, and shortly before death a considerable amount of clear fluid was discharged from the nose. Death took place a few hours after admission.

Necropsy.—On cutting through the corpus callosum and fornix a globular semi-translucent tumour was seen lying in the anterior part of the third ventricle. (Fig. 1.) It was about the size of a small toy marble, smooth, soft, and gelatinous, becoming after fixing in formalin quite firm and hard. The tumour lay free in the cavity of the third ventricle, except where it was attached to the anterior part of the right choroid plexus by a narrow band of fibrous tissue. It had apparently pushed down the front part of the velum interpositum, so that the right vena galeni ran under the pedicle of the tumour and reappeared about half-way down the right side of the tumour. The two lateral walls of the third ventricle—that is, the anterior ends of the optic thalami—could be seen to be hollowed out by the convex surface of the tumour, as was well shown when the tumour was lifted from its bed. The pedicle spread out into a fibrous capsule covering the tumour, and outside this some villi of the choroid plexus were seen in front. The lateral ventricles were somewhat dilated, the right rather more than the left.

CASE 2 (Catalogue No. F. 130).—The patient was a single woman, aged 18 years. She had suffered from nocturnal enuresis since childhood. There had been no other illness until six months previously, when recurring attacks of headache began. These did not prevent her from doing her work until the day before her death, when the headache was so severe that she had to leave work and go home to bed. The headache improved and she slept well. Next morning, when seen by her friends, she still complained of headache and stayed in bed. At midday when they went to her room they found her lying dead in bed.

A necropsy was made by my colleague, Mr. A. Garrick Wilson. On removing the brain about 2 ounces of clear fluid escaped from the cut infundibulum, and excess of fluid was found in the lateral ventricles. A tumour corresponding closely in size, shape, position, and general appearance to that described in Case 1 was found. (Fig. 2.) In the fresh state it was semi-diffluent and like a bag of soft jelly, but after being preserved in formalin solution it became firm and hard. It was attached, like the previous specimen, to the right choroid plexus at its anterior end, and rested upon the velum interpositum.

Microscopical examination.—A single description will serve for the two tumours. When cut into after hardening they had a firm, semi-translucent, almost cartilaginous consistence and a homogeneous structure. Microscopical sections were difficult to prepare on account of the brittleness produced by the reagents used. The bulk of the tumour consisted of a structureless hyaline matrix containing at wide intervals epithelial cells in various stages of degeneration. These might be single or in groups of two or three (Fig. 3), or, especially near the surface, in clusters of larger numbers. (Fig. 4.) In the last case the cells were less degenerated and showed a more typical epithelial character; this was also true of the solitary cells nearer the surface. The similarity of the more central parts to degenerating hyaline cartilage was striking. In sections of the first case the surface of the tumour with its enclosing capsule was intact. Externally, several layers of well-formed fibrous tissue were seen. Immediately inside this and lying outside the hyaline central mass was a single layer of cubical epithelium, well defined and showing no marked degeneration. (Fig 5.)

It is evident that these two specimens are identical in structure and position, and that they do not belong to any ordinary type of tumour constantly met with. No mention of a similar condition is referred to in most pathological text-books on the subject. In January, 1911, when these specimens were shown at the Pathological Section in London, I had only been able to find records of two other cases.

Of these two cases, one (Case 3) was recorded by F. W. Mott and J. O. Wakelin Barratt. Thanks to the courtesy of Mr. Wakelin Barratt, who allowed me to make a thorough examination of his microscopical sections from this specimen, I can say that, in its broad general features, this tumour corresponds so closely with the two here recorded that in spite of minor differences—viz., the shape of the rows of cells forming the capsule, &c., there can be no reasonable doubt that all three are of the same type. A full account of this case will be found in the reference given below, but a few extracts will show how close is the similarity.

CASE 3.—F. W. Mott and J. O. Wakelin Barratt: Archives of Neurology of Claybury Asylum, vol. i., p. 421.

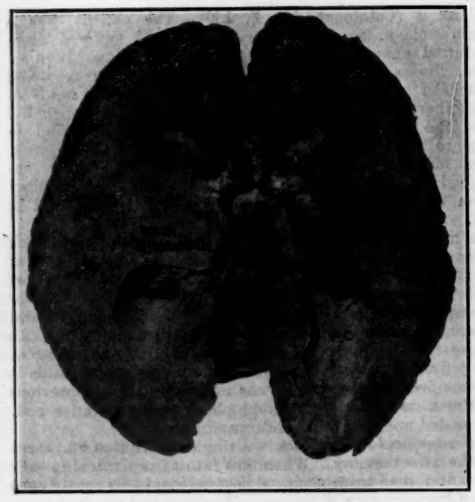
Necropsy.—Convolutions rather flattened. Left ventricle distended. Third ventricle distended by a greenish gelatinous tumour the size of a barcelona nut. After 24 hours in formalin solution the tumour cut like firm jelly—one-half escaped from a distinct capsule and floated in the water. Its site was immediately above the optic tract and corpora albicantia with centre over the infundibulum. The delicate cyst wall was attached at one point to the choroid plexus.

Microscopically.—There is a delicate capsule of connective tissue beneath which are several layers of flattened cells containing large deep-staining nuclei. The outlines of the cell bodies cannot be seen. More deeply the nuclei are seen embedded in a hyaline matrix in groups of two or three, simulating cartilage, but more widely separated from each other. Towards the centre of the tumour these become fewer and more degenerated, and the relative amount of hyaline matter becomes greater.

The other case, of which I had found a record in January, 1911, was the following. The illustration given in this case

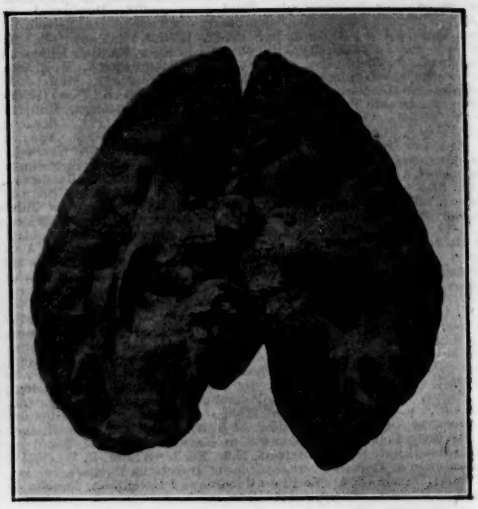
[1] They are the specimens referred to at the foot of the table of cases in Weisenburg's article, *Brain*, vol. xxxiii., p. 236.

FIG. 1.



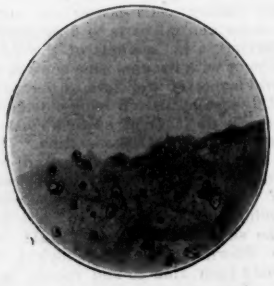
Colloid tumour, T, lying in anterior part of third ventricle. Dilatation of lateral ventricles. (Case 1.)

FIG. 2.



Colloid tumour, T, lying in anterior part of third ventricle. Dilatation of lateral ventricles. (Case 2.)

FIG. 3.

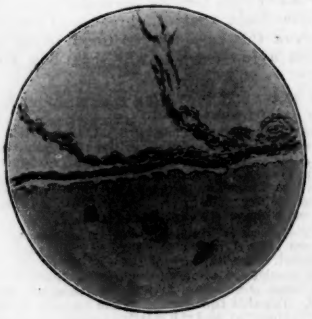


Colloid tumour of third ventricle showing yaline matrix containing degenerated epithelial cells scattered at intervals. (Case 2.)

FIG. 4.

Colloid tumour of third ventricle. A group of epithelial cells near the surface of the cyst. (Case 2.)

FIG. 5.



Surface of colloid tumour showing fibrous capsule and subcapsular epithelial layer. (Case 1.)

FIG. 6.

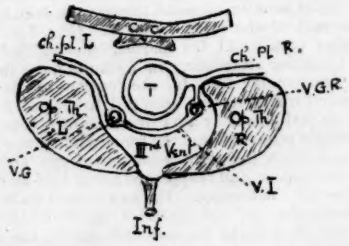


Diagram to illustrate position and attachment of colloid tumours. (Cases 1 and 2.) T, Tumour. Ch. Pl., Choroid plexus, right and left. Op. Th., Optic thalamus, right and left. V.G., Vena galeni, right and left. Inf., Infundibulum. C.C., Corpus callosum. V.I., Velum interpositum.

(Plate XXVII.) is so similar to that of one of my specimens (Fig. 1) as to be almost an exact replica, and the specimen from which it was taken is now in the museum of the National Hospital.

CASE 4.—F. E. Batten and J. S. Collier: *Brain*, vol. xxxviii., 1899, p. 473; also Plate XXVII.

This was from a woman, aged 42, who was in the National Hospital for the Paralysed and Epileptic under the care of the late Dr. Charles E. Beevor. She had no symptoms whatever until 14 days before admission, when giddiness and severe frontal headache set in. This got steadily worse, and two days before admission she became dazed, vomited, and later became comatose. She lay in bed with the head turned into the pillow, and resented all attempts to move her from this position. Pupils unequal, right larger than left; discs swollen and hyperæmic, edges blurred, veins enlarged. C.S. respiration. Death from sudden respiratory failure.

Necropsy.—Convolutions flattened. A cyst was found lying below the anterior part of the fornix, pressing down into the third ventricle, blocking up the foramen of Monro. It was adherent to both choroid plexuses, and probably grew from the left. There were numerous small cysts in both plexuses. The cyst, fornix, and choroid plexuses could all be turned back together. The lateral ventricles were somewhat dilated.

Microscopical examination.—The cyst became firm after being in formalin, and was composed of three layers, an outer formed of elongated cells with rounded nuclei closely packed, making a fibrous coat, a middle layer composed of large epithelial cells like prickle cells of mucosum, and an inner layer of structureless tissue forming the bulk of the tumour. The transition of the prickle cells into hyaline tissue could be traced.

Since that time I have been able to collect five other cases, in which, from the pathological description, there can be little doubt but that they are also of the same nature. They are as follows.

CASE 5.—Walmann: Virchow's Archiv, Band xlv., p. 385.

Necropsy.—Ventricles dilated; under the fornix an oval tumour the size of a nut adherent by posterior border to median choroid plexus, surrounded by delicate transparent membrane; rest of tumour free. Contents, a gummy mass, liquid, dark yellow. Another tumour the size of a haricot bean, soft, in right choroid plexus. Cellular envelope of vascular connective tissue, numerous fatty cells. The author says it is "the only case of lipoma of the plexus he knows of."

CASE 6.—J. Stedman: *Boston Medical Journal*, 1883, p. 135. Colloid cyst coming probably from the choroid plexus; ventricular dropsy.

History.—Architect, aged 28. For one year severe attacks of headache, and once delirium. March 3rd: Quite well, walking all day and ate a good dinner. At 4 A.M. next day violent headache; took laudanum without relief, and was later given ether, inhaling altogether 4 drachms. He then slept till 11 A.M., and at 12.30 was found dead.

Necropsy.—Ventricles distended with fluid; gelatinous tumour the size of a filbert found on the velum interpositum in the middle line just behind the fifth ventricle in region of anterior commissure at the front end of the optic thalami.

CASE 7.—Audry: *Revue de Médecine*, 1886, p. 897.

History.—Male, 45 years. Three weeks' headache and vomiting; drowsy; feeble-minded; died comatose after few days in hospital.

Necropsy.—Ventricles dilated; in left ventricle attached to choroid plexus a moveable tumour lying on the optic thalamus, size of a small nut; surface a little irregular, spongy, and friable, covered with a fibrous capsule. Consists of cells of various sizes, granular contents, round or oval nuclei, fat droplets, white and red blood cells, pigment granules; brain sand.

CASE 8.—S. A. K. Wilson: *Brain*, vol. xxix., p. 524, Ectopia Pupillæ in certain Mesencephalic Lesions. (Case quoted by Dr. Wilson.)

Necropsy.—A spherical tumour the size of a large marble found in third ventricle, growing from and attached to the ependyma. The parts around were much distorted. The tumour itself was peculiarly homogeneous and colloid-like, of firm consistence and encapsuled in a thin membrane.

CASE 9.—T. H. Weisenburg: Tumours of the Third Ventricle, with the Establishment of a Sympton-complex, *Brain*, vol. xxxiii., 1910–11, p. 260.

At necropsy a tumour about the size of a marble was found in the upper anterior portion of the third ventricle, making a slight but equal groove for itself in both optic thalami. The growth was just anterior to the middle commissure, which was not distorted or pressed upon, and the foramina of Monro, which were dilated, were evidently closed up by the growth. The lateral ventricles were much dilated, the third ventricle being enlarged only a little. The aqueduct of Sylvius was normal. The tumour was almost round, whitish in appearance, and was easily displaced from its groove. It was loosely attached to the choroid plexus and in such position that it could very easily close up both foramina of Monro. It would also have been possible for it to be displaced from its groove by deviation of the head.

Microscopic examination demonstrated a colloid cyst.

Weisenburg in his interesting paper, giving a tabulated list of cases of third ventricle tumour, does not include the cases of Batten and Collier, Stedman, and Audry, which I have quoted briefly in this article.

We have thus a series of nine cases in which a colloidal cystic swelling attached to the choroid plexus is found lying in the anterior extremity of the third ventricle, attaining the size of a marble or barcelona nut, and causing death either with or without definite cerebral symptoms for some time before.

I do not propose to consider what the diagnostic symptoms may be—they will not necessarily differ to any extent from those of intraventricular tumours of different structure. In Weisenburg's paper this question has been gone into fully and a symptom complex outlined. I shall limit myself to the pathology of these cases.

In the first place, one is apt to be misled by the description of this kind of specimen as being like a marble—it is only so when preserved in hardening fluid; when fresh they are soft and gelatinous, and must by their physical characteristics pack closely up against the sides of the ventricle and very effectively plug the foramen of Monro. It seems probable that the process by which they have reached their final positions has been something as follows. Starting as a small tumour lying in the anterior end of one or other choroid plexus, on the floor of the corresponding lateral ventricle, it has in its growth followed the line of least resistance, or been pushed along with the current of cerebro-spinal fluid, and gradually slipped over the inner border of the optic thalmus, into the third ventricle, pushing beneath it the velum interpositum. Until it reached such a size as to become wedged in the third ventricle probably few symptoms would arise, but with the gradual obstruction to the venous circulation through pressure on the veins of Galen, and the obstruction to the passage of cerebro-spinal fluid, temporary or continued symptoms of intracranial pressure develop. In the temporary attacks of headache, as in my second case, or the more severe attacks of stupor preceded by restlessness in the case recorded by Mott and Barratt, recovery followed rest, and possibly the dorsal or a unilateral decubitus relieved the ball-valve pressure and produced equilibrium once more. In the case by Batten and Collier, and possibly also in my first case, the ball-valve once having come into play remained firmly fixed until death; for it seems obvious that with any increase of pressure in the lateral ventricles the sides of the third ventricle will be more tightly pressed upon the contained tumour, and it will therefore become more firmly held the more the pressure increases. In fact, once the tumour reaches its final position and a certain size everything aids its obstructive action—the more it obstructs the veins of Galen the greater will be the pressure in the lateral ventricles and so the tighter will the tumour be held; but the tighter it is held the more completely will it plug the ventricular channel.

As to how and when these tumours have begun there is not evidence enough to say. It is probable that in each case they had existed for some time prior to the appearance of any symptoms, for the symptoms of mechanical obstruction demand a certain size and a certain position, and, as we have seen, everything points to that position not being the original site of the cyst formation. The longest duration of symptoms in these cases (in two, unknown) was 12 months, the shortest a few days.

As regards the origin of these cysts a good deal of further information is needed before any definite opinion can be formed. Whether they arise as an embryonic epithelial inclusion or some later tumour-formation due to invagination or shutting off of a fold between choroid villi is unknown. Small cystic swellings of the choroid plexus are of very common occurrence, but between these and the comparatively large swellings above described there seems to be no recognised connexion.

The importance of accurate diagnosis in these cases is very great, for it seems probable that ventricular puncture with free removal of fluid would give temporary relief. The removal of even a small amount of fluid might just relieve the lateral pressure and release the ball-valve sufficiently to allow the flood to subside. That more than temporary relief can be expected so long as the tumour remains *in situ* is not to be expected, but the possibility of removal, or even of making a permanent communication between the lateral ventricles and the subarachnoid space in some such way as the method suggested by Anton and v. Bramann,[2] is not beyond the range of practical procedure.

In conclusion I wish to thank my colleagues, Professor Burgess and Mr. Garrick Wilson, for permission to record these cases, and others for kindly giving me particulars of their cases.

Sheffield.

[2] Deutsche Medizinische Wochenschrift, No. 6, 1912, S. 254.

A CASE OF PNEUMONOTOMY FOR FOREIGN BODY.[1]

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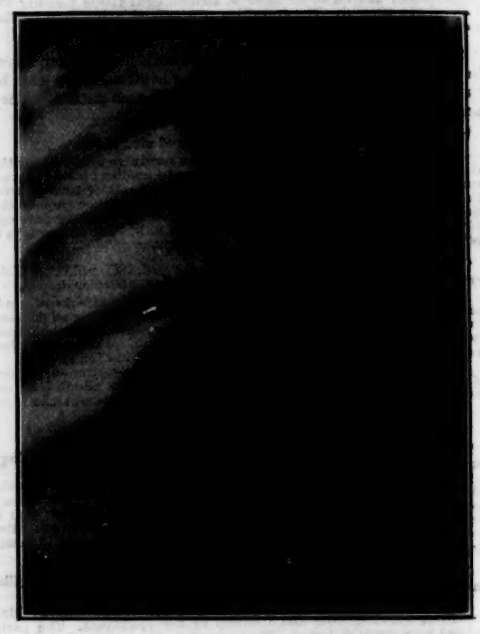
With Notes by C. R. C. LYSTER, M.R.C.S. ENG., *Medical Officer in Charge of the Electrical and X Ray Department, Middlesex Hospital; and* R. E. APPERLY, M.R.C.S. ENG., L.R.C.P. LOND., *Assistant Anæsthetist to the Middlesex Hospital.*

THE fortunate rarity of the necessity for such a serious operation as that of cutting into the substance of a lung for the removal of a foreign body, and the paucity of records of such where the condition was not associated with the presence of empyema, make me think that the history and records of the present case cannot fail to be of interest. In this case, as will be seen, every effort had been made to remove the pin through the trachea. These not having been successful, there seemed to be only two courses open: one might have awaited the formation of abscess and empyema, with the hope that the pin would have found its way into the pleura and have been removed when the empyema was opened, the alternative being direct incision into the lung through an opening in the chest wall. Realising what great danger the child would run by adopting the former of these, and remembering how seriously and permanently the lung in such cases is damaged even if the patient escapes with his life, I thought it best, after advising the parents of the severity of the performance, to make an effort to remove the pin by a direct incision.

The patient is a little boy, who at the time of the accident was aged 4½ years. He was brought to the Middlesex Hospital on June 3rd of this year from Lincolnshire to be under the care of my colleague, Mr. Somerville Hastings. The history given was that four days previously he had swallowed (as it was termed) a shawl pin about 2 in. long. When admitted he appeared to be in good health, and there were practically no abnormal signs to be found in the lungs. A skiagram showed the shadow of a pin at the level of the third rib on the right side, apparently in the right bronchus, with the point upwards. The day after admission Mr. Hastings tried to remove the pin through a bronchoscope; it was seen and grasped several times with forceps, but efforts to extract it were unsuccessful. This operation was followed by a good deal of rise of temperature and some consolidation at the base of the right lung. On June 12th a low tracheotomy was performed and an endeavour made to remove the pin through the wound and also through the larynx; and on the 15th and also on the 19th this was again attempted but without success. As Mr. Hastings was leaving London, he kindly transferred the child to my care on June 22nd. The tracheotomy wound was then closing, but there was a good deal of emphysema about the neck and thorax; the child's general condition was quite good, although he had a slight cough and the breath was rather offensive. A skiagram taken at this time showed the pin to be lying further down towards the diaphragm than on the previous occasion.

On June 24th, under an anæsthetic and with the aid of a fluorescent screen, I made an attempt through the tracheotomy wound to remove the pin by means of instruments made out of gum-elastic catheters, with the stylet protruding through the cut end and sharply turned over. With one of these I thought that I succeeded in grasping the pin, but even on using a fair amount of force it could not be moved, and apparently the instrument frequently passed into different channels to that occupied by the pin. Mr. Lyster at this time localised the pin lying almost vertically with the head apparently about ¾ in. above the diaphragmatic surface of the right lung.

On July 3rd the tracheotomy wound was closing again, and no air was entering through it. The child had a slight cough, but no expectoration; the breath was offensive, and he was slightly anæmic; otherwise he appeared to be in fairly good health, and on this day the open operation was performed. Mr. Apperly anæsthetised the patient rather deeply, he was turned on to the left side, and the whole of the back of the right chest painted with tincture of iodine. The marks on the chest wall, which had been used for the purpose of localisation, were still visible, and were used as guides as to the level at which to open the chest. A square flap consisting of skin and superficial muscles, measuring about 4 in. in width and depth, was then reflected backwards, the edges of the flap being parallel to the direction of the ribs and the posterior ends of the upper and lower incisions reaching to within about an inch of the middle line of the back. After the bleeding had been arrested four of the exposed ribs were divided sub-periosteally at the anterior part of the wound. The deep muscles of the back were then retracted towards the middle line, and the same ribs were cut with bone forceps as far back as they could easily be reached, the forceps being passed close above and below the bones. The intercostal muscles and pleura were then divided along the anterior ends of the cut ribs in the whole length of the wound. Air entered freely into the pleural cavity without any serious effect on the patient, but just at this stage he coughed and brought up some very offensive pus. He was soon comfortable again, and the operation was continued by dividing the intercostal muscles and pleura above and below the divided ribs, and then the flap, consisting of ribs, intercostal muscles, and pleura, turned completely backwards on the hinge formed by the posterior section of the ribs. A window about 3 inches square was thus made into the pleural cavity. The lung was seen to be collapsed and fallen away from the wound, and the diaphragm bulged strongly upwards at each expiration and had to be kept down by a flat retractor whilst the lung was being examined. A few fine adhesions between the lung and pleura were found posteriorly, but were not sufficient to hold the lung against the chest wall, and were quite easily broken away. A finger was passed under the lung between it and the diaphragm, and at about the centre of the diaphragmatic surface it was thought that a hard spot could be detected in the substance of the lung. Two silk sutures were then passed by means of round-bodied needles through the edge of the lung to hold it in position against the chest wall, but they were not found to be of much assistance. Pushing the lung upwards, it was possible to see its under surface, and just where the hard spot had been detected an incision was made into the substance of the lung about ½ in. to ¾ in. deep. This was followed by very slight



Skiagram taken just before the open operation.

[1] A paper read at a meeting of the Clinical Section of the Royal Society of Medicine on Dec. 13th, 1912, when the patient was shown.

hæmorrhage. On passing the tip of the finger into the wound the lung receded so much on the least pressure that nothing could be felt. Two fingers of the left hand were then passed into the sulcus between the middle and lower lobes of the lung and the lower lobe pulled outwards and steadied. Directly this was done the tip of the finger of the right hand in the wound in the lung felt the head of the pin, and it was easily extracted with sinus forceps. It was found to be a steel pin 1½ in. in length, with a glass head about ⅛ in. in diameter. Immediately after its extraction a little very offensive pus followed it out of the wound in the lung. One fine-silk suture was passed through the edges of the wound in the lung, partially closing it. At this time the child was taking the anæsthetic fairly well and the breathing was not very much disturbed. After the cavity and surrounding parts had been dried the bony flap was replaced and secured by silk sutures, some of them passing through the periosteum to keep the ends of the ribs in position. The skin and muscular flap was then sutured with horsehair. A small drainage tube was inserted at the anterior inferior angle of the wound, passing down to where the incision into the lung had been made, the wound was dressed, and 1/6th grain of morphia was injected hypodermically.

For the first few days after the operation the child was very irritable and restless. He appeared to be in a good deal of pain, crying out suddenly; the breathing was irregular and jerky, with an occasional slight cough. He was given rather frequent small doses of morphia, but rarely slept more than a very short time. Very little discharge came from the tube, and it was not offensive after the second day. The temperature began to rise immediately after the operation, and was constantly between 101° and 102° F., the pulse and respirations being very rapid (150 to 160 and 44 to 50 respectively). On the seventh day the child appeared to be much better and more comfortable, the breathing easier and less jerky. Air could be heard entering the upper and back part of the lung; a few rhonchi were audible over the back of the left lung; the temperature was falling slowly; food was taken well, and the boy was sleeping fairly without narcotics. From this time onwards recovery was only interrupted by the occurrence of two small spots of necrosis at the anterior ends of the divided ribs. On August 6th an anæsthetic was given and these were removed, after which the wound healed completely. There remained some weakness of the upper part of the right rectus abdominis muscle, the result of the division of the intercostal nerves. Now it can be seen that the chest moves well, the wound is soundly healed, and air can be heard to enter the greater part of the lung. There is no scoliosis; the child appears to be very well and not much the worse for his experience.

The literature of foreign bodies in the trachea, bronchi, and lungs is extensive, and I have not been able to go through it very thoroughly, but as far as I have gone there seem to be but few recorded successful cases of direct incision into the lung tissue through an unaffected pleura for the removal of a foreign body. The presence of an empyema completely alters the physics of the chest, and the operation under those circumstances would be easier and probably more free from immediate risks.

The operation I have reported shows how much safer than is usually supposed is the deliberate opening of a healthy pleura and collapsing of a lung, and how such a collapsed lung may be handled and incised with safety. It had been my intention, if I succeeded in finding and removing the pin, to completely close the wound and aspirate the air from the pleura; the presence, however, of the pus which followed the extraction of the pin compelled the use of a drainage-tube. The case shows, too, I think, that if the operation is rendered necessary by failure to extract a foreign body *per vias naturales* the sooner it is performed the better, so as to avoid the risk of suppuration in the lung.

I must not conclude without a word of thanks to the sister of Broderip Ward, my house surgeon, Mr. E. A. Saunders, and dresser, Mr. E. De Souza, to whose unremitting care and attention a great deal of the successful issue of the case was due.

Remarks by Mr. C. R. C. LYSTER.

A radiogram of the lung with the pin impacted showed the head of the latter to be downwards and ⅓ in. from the base of the lung. The pin lay parallel to the vertebral column 1½ in. from the middle line; cross localisation showed it to be situated 1 in. in front of the angles of the ribs.

Three attempts had been made to remove the pin through the larynx under X ray examination; on each occasion the forceps grasped it, but traction caused it to be drawn into a more horizontal position, apparently dragging the lung tissue with it.

Remarks by Mr. R. E. APPERLY.

The chief points of interest in this case from the anæsthetist's point of view were:—

1. The number of times anæsthetics of long duration were given within a comparatively short period to so young a child. During a period of just over a month he was anæsthetised six times, the anæsthesia lasting over an hour on each occasion except the last, when its duration was 45 minutes. Chloroform alone was used in each except on the last occasion, when oxygen was given in conjunction with it. About 36 hours after the first operation (bronchoscopy) I was asked to see the patient as he had been vomiting all day. Glucose was given in rectal saline injections and also by the mouth, and there was rapid improvement during that night and the next day. Glucose was given before the operation on each subsequent occasion, and no symptoms of acidosis appeared.

At the operation when the pin was removed the patient was deeply anæsthetised during the preliminary stages of the procedure and when the pleura was incised; subsequently he was kept lightly under. No anxiety was experienced until the lung was manipulated, when some offensive pus was expelled into the upper air passages, and the patient was very bad for a few minutes, but soon recovered.

2. Chloroform was given on each occasion, and after glucose was given no symptoms of acid intoxication appeared.

3. The little disturbance to the patient caused by the opening of the pleura and the establishment of complete pneumothorax, especially as at that time he was lying over on the unaffected side.

CÆCOTOMY FOR THE REMOVAL OF A HAIRPIN IMPACTED IN THE ASCENDING COLON.

BY LAWRIE McGAVIN, F.R.C.S. ENG.,
SURGEON TO THE SEAMENS' HOSPITAL SOCIETY (DREADNOUGHT).

ALTHOUGH there is little that is new to be said on the subject of foreign bodies in the alimentary canal, the following case furnishes a good example of an accident which, simple in itself, may leave the surgeon in some doubt as to the wisest course to be followed, and further, shows that too much faith must not be placed in even a good radiogram as regards the position of foreign bodies in the intestine, no matter how straightforward its showing may appear to be.

The patient, a medical man, 38 years of age, while confined to bed with a bad cold, determined to swab out his nasal fossæ with menthol; he therefore took a fine hairpin, 2½ inches in length and having waved limbs, straightened it out so as to form a probe, and having bent one end into a hook and wound round the latter some cotton wool, proceeded, while in the recumbent position, to apply the menthol. Passing it deeply so as to reach the naso-pharynx, he unfortunately lost hold of it; the pin at once passed into the pharynx, and before he could obtain help the patient swallowed it.

I saw him 48 hours later as he complained of some discomfort in the region of McBurney's point, and the pin had not so far appeared. There was some tenderness and slight rigidity, but nothing could be felt, and he was otherwise perfectly well. A radiogram had been taken without result, and the question of exploration was raised by the patient; but in view of previous experience of foreign bodies and the difficulty of locating them, and of the very pliable character of the pin, I preferred to wait in the hope of its being passed per anum. This, however, in spite of dry diet, did not occur. A second radiogram was now taken and showed the pin lying apparently in an almost vertical position a little to the outer side of the sacro-iliac joint, its central point being on a level with the posterior superior iliac spine, and *the hook end being uppermost*. Owing to this latter fact, and

because the pain complained of at first had disappeared, operation was again postponed. During the next week a third radiogram showed that there was no change in the position of the pin in spite of the bowels having been moved from time to time. It was thus obvious that the pin had become impacted, and the constancy of its position with regard to the sacro-iliac joint pointed to the ascending colon as the seat of its arrest rather than to the small intestine. I therefore advised its removal—an opinion which was confirmed by Mr. Raymond Johnson, who kindly saw the case for me. The operation was accordingly carried out, the cæcum being approached by an incision to the left of the linea semilunaris in preference to the usual trap-door incision for appendicectomy, as I considered that this would leave me more room for exploration in the event of the pin not being present in the colon. It was, however, felt in the latter, lying about 4 inches below the ileo-cæcal valve. Contrary to expectation and to the showing of a fourth radiogram taken shortly before operation, it was found to be almost transverse to the long axis of the bowel, bent like a spring, one end causing the wall of the bowel to stand out acutely on the anterior aspect, and being at the higher level. This point was gripped and the bowel partially withdrawn from the abdomen, with the result that the patient became rather collapsed and the bowel had to be released again. A second attempt a little later was successful, and it was then found that nothing remained to cover the projection but the thinnest layer of peritoneum, the mucous and muscular layers having been perforated. A slight prick with a scalpel served to release the pin, the *blunt hooked end* of which at once appeared, and being withdrawn was found to be bent in the manner shown in the outline sketch; it must thus have very shortly perforated the remaining layer of the bowel wall had it not been removed. The puncture hole was surrounded by a purse-string suture, the bowel washed and dropped back into the abdomen, and the wound closed. The patient's convalescence was uninterrupted.

Diagrammatic sketch of condition. 1. Cæcum. 2. Ileum. 3. Hairpin.

The case is of some interest, not only from the unusual nature of the accident, but from the apparent ease with which so pliable and sharp-pointed a foreign body should have passed the cardiac, pyloric, and ileo-cæcal orifices, as well as the whole length of the small intestine, without arrest. So far as the cardiac and ileo-cæcal orifices and the small intestine are concerned, this must be put down to its elongated character, but only good luck could have helped its five inches of length through the pylorus. Having arrived at the colon it would there have greater width in which to alter its position and so become impacted transversely. The second point of interest was the false idea given of its real direction by an excellent radiogram. In this connexion it is wise to remember that the value of a radiogram of a foreign body in the intestine is chiefly limited to denoting the quarter of the abdomen in which it lies, since in a coil of jejunum lying low down it may appear to be in the cæcum or the sigmoid, while in a coil of ileum lying high up it may suggest the stomach or the transverse colon; it cannot denote the actual section of bowel with any certainty. As an example of this I recently had occasion to operate upon a child who had swallowed a two-inch French nail. The radiogram clearly showed the nail in the epigastric angle close to the ensiform cartilage, and therefore presumably in the stomach. This organ was explored by palpation through the lesser omental sac, and was then opened and explored with the finger, but nothing was found; the transverse colon was examined inch by inch, as were also the nearest coils of ileum and the whole of the duodenum and commencement of the jejunum with a like result, and yet on the day following operation the radiogram showed the nail in exactly the same position. No further operation was permitted and the boy left hospital still in possession of the nail.

The last point of interest is the almost complete absence of pain and tenderness in spite of the fact that the point was impinging forcibly on the peritoneum. In view of this fact it would certainly seem wise in all such cases to attempt the removal of any sharp-pointed foreign body rather than to trust to diet and the often imperfect attempts of nature to pass it along. The fatality frequently attending the swallowing by dogs of splinters of chicken and rabbit bones points especially to this conclusion, the more so when one considers the greater thickness of the intestinal wall in these animals. In this particular case a fortunate coincidence directed the pin with the blunt-hooked end leading, and yet on its arrival in the colon it was just this blunt end which was on the point of perforating the bowel. The sharp end could be felt on the deep aspect of the colon projecting into the mesocolic tissue, but in view of the uninterrupted convalescence it had presumably not caused a perforation here.

Weymouth-street, W.

MYELOID LEUKÆMIA IN A CHILD WITH BLOOD PICTURE OF SO-CALLED MEGALOBLASTIC DEGENERATION.

BY C. H. TREADGOLD, M.A., M.D. CANTAB.

THE following case is reported on account of the megaloblastic degeneration which throughout was the dominating feature of the peripheral blood. Clinically the resemblance to acute leukæmia was marked, although the white cells were not at first characteristic of that condition. Accordingly the diagnosis of leukanæmia was made.[1] Before death, however, the white cell moiety of the blood became typically leukæmic.

The patient, a boy aged 13½ years, was admitted to the West London Hospital on May 19th, 1912. The father stated that the boy had always been strong and healthy up to the middle of the previous month, when pallor was noticed; that during the next three weeks he had complained of fatigue and bleeding from the nose, and that four days before admission the bleeding had been severe, lasting on and off for 24 hours.

On admission there was marked pallor of the skin and mucous membranes; the former was of a pale yellow colour like that of Addisonian anæmia, but there was no sign of jaundice on this or any other occasion. A faint mottling was present on the chest which resembled a disappearing purpuric eruption, but there was no history of such. None of the superficial glands were definitely enlarged, but the inguinal glands were palpable, and a small gland could be felt in each axilla. The respirations were 28 per minute, the temperature was 101° F., and the pulse was 116. The latter was markedly collapsing in character, but quite regular. The heart was considerably enlarged, the area of dulness extending half an inch beyond the right sternal margin and half an inch outside the nipple line. The second sound was everywhere short and sharp. A systolic apical bruit obscured the first sound; a pulmonary systolic bruit together with a faint double murmur over the aortic area were also audible; all were soft and blowing in character. The breath was heavy and offensive; the tongue was furred, but its epithelium was normal in other respects; the teeth were excellent. Examination of the abdomen was difficult owing to distension and rigidity. The liver was not enlarged in an upward direction, but there was a doubtful increase of resistance and impaired resonance immediately beneath the right costal margin. The splenic dulness, too, seemed to be increased, but neither the liver nor the spleen could be felt. No abnormality was detected in the respiratory or central nervous systems. The urine was acid, specific gravity 1010, and contained no albumin. A specimen was afterwards tested for urobilin. None was found, although urobilinogen was present in pathological quantity. Ten days later the same specimen still gave the test for this substance to a modified degree, but none of it had been converted into urobilin.[2] Albumose and indican were absent. There was

[1] This term, originally introduced by Leube, was intended to include those cases which could not be classified either under the head of leukæmia or pernicious anæmia.

no albuminuria or hæmoglobinuria throughout. The fæces showed no obvious abnormality.[2]

Blood cultures were negative and the patient's blood serum did not exert any hæmolytic action on the blood corpuscles of a healthy individual. The serum was very yellow, but the reason for this was not investigated.[2] Wassermann's reaction test was kindly tried by Dr. R. R. Elworthy, with a negative result. Von Pirquet's test was also negative.

May 24th: Basal and apical systolic murmurs were alone heard. An ophthalmoscopic examination revealed two small linear hæmorrhages, one on the periphery of each fundus; the discs were normal. An examination of the nose by Dr. H. J. Davis showed nothing beyond marked pallor of the mucous membrane and several stellate venules on the septum. 28th: Repeated epistaxis since the 24th. A dark purple ecchymosis had developed beneath the mucous membrane covering the upper jaw. A friction sound was audible to the right of the sternum, and there were increased resistance and impaired resonance for two fingerbreadths below the right costal margin.

June 4th: The boy looked, if possible, paler and the mucous membranes were still more blanched. Facial œdema had been noticed since June 1st and had steadily increased. The epithelium over the oral hæmorrhage had sloughed, and there was slight but persistent oozing from its periphery. 8th: The patient seemed weaker and could hardly open his eyes owing to œdema. The extremities were slightly swelled and free fluid was present in the scrotum and abdominal cavity; there were also indications of hydropericardium. 10th: Well-marked ascites and hydropericardium together with widespread slight œdema. The patient was semi-comatose and fretful when roused; previously his mental condition had been normal. 12th: Patient seemed brighter. The œdema was hardly noticeable, but breathing was difficult and the appetite very poor. 15th: Marked ascites and œdema, the scrotum being distended with fluid. The bases of both lungs were dull. 21st: Petechial hæmorrhages into tongue and mucous membrane of right cheek; purpuric spots on back and legs.

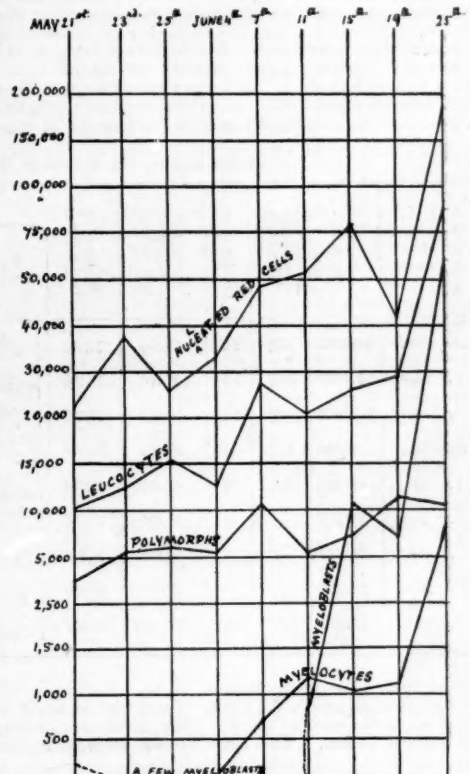
Death occurred on June 27th. For the preceding three days the boy was comatose most of the time. During this period the ascites and œdema diminished considerably, enabling the lower margin of the liver to be felt about an inch below the umbilicus. Slight bilateral enlargement of the cervical glands was also noticed for the first time. The temperature varied from 101° to 103° throughout, with the exception of the last day or two, when it was somewhat lower.

The treatment was chiefly symptomatic. Injections of soamin were given for a time but were afterwards abandoned. No beneficial effects were observed.

The blood.—The results of the various examinations are shown in the accompanying table. The absolute numbers per cubic millimetre of the more important cells are roughly depicted in the appended chart. The blood showed many interesting features from the commencement. At the first two or three examinations it did not flow very readily, but from June 4th onwards its coagulability was much diminished and towards the end blood flowed freely from the slightest possible puncture and the bleeding was difficult to stop. The colour index was at first above unity, but later fell below it. "Live films" showed rouleaux formation, though this was somewhat imperfect; they also showed poikilocytosis. Great difficulty was experienced in making accurate "white counts"; Toisson's fluid and various strengths of acetic acid with methyl violet, &c., were tried, but to no purpose. Although typical megaloblasts, lymphocytes, &c., could be easily distinguished, a residue remained which defied analysis, and the leucocytes could only be estimated by counting the total number of nucleated cells and apportioning them by means of a stained film. In such preparations, polychromasia and poikilocytosis were well marked. Basophilic stippling was noticed occasionally, but required a good deal of looking for. Macrocytes formed a large proportion of the red corpuscles and occasional microcytes were seen. Typical normoblasts were scanty in all the films, the predominating cell being a megaloblast with a varying quantity of polychromatophilic stroma and a large nucleus rather deficient in chromatin; many were seen in process of division, and their nuclei were of the most varied shape. This feature was most marked from June 7th onwards. Gigantoblasts were also observed; a few showed a small dark nucleus and normal stroma, but there were usually marked polychromasia and well-defined spaces between the nuclear chromatin. Free nuclei and microblasts could always be found—in fact, all possible varieties of nucleated red cells were present. Their numbers, too, were altogether phenomenal, the last examination revealing nearly 184,000 to the cubic millimetre. Osler,[3] in a series of 81 cases of Addisonian anæmia, gives 15,000 erythroblasts per cubic millimetre as the highest number observed by him. Gulland and Goodall[4] record 52,000 in a case of chronic myelocythæmia, while 14,000 per cubic millimetre seems to be the highest figure recorded in leukanæmia.[5]

The white cells also showed marked abnormalities. Large lymphocytes and hyalines (large mononuclears of Ehrlich)

Chart showing the Absolute Numbers per Cubic Millimetre.



(For the sake of clearness the lymphocytes, hyalines, and transitionals have been omitted.)

were present in considerable numbers in the earlier films. "Ghost" cells, which were also a feature, seemed to be largely derived from these hyalines as shown by the presence of intermediate forms. Between May 23rd and June 15th the majority of the polymorphs possessed few or no granules; before and after these dates nearly all of them were granulated—a curious fact which admits of no ready explanation. Owing to immaturity or degenerative change their nuclei were much less polymorphic than usual. From June 4th to 11th many of these cells were excessively small, and during this period the corresponding myelocytes were also very small. By June 15th the character of the films had altered considerably, and from that date onwards the predominating white cell was the agranular myelocyte or

[2] For the examination of the urine, fæces, and blood serum for Hb derivatives vide Parkes Weber and Dorner on Acholuric Jaundice, THE LANCET, Jan. 22nd, 1910, p. 227. This article includes many references.

[3] Osler: The Principles and Practice of Medicine.

[4] Gulland and Goodall: The Blood, 1912.

[5] Hurter: Liverpool Medico-Chirurgical Journal, 1907, p. 105.

myeloblast. With eosin and methylene blue they showed a large, pale, and homogeneous nucleus surrounded by pale blue cytoplasm which frequently had the appearance of basophilic granulation. When stained by Leishman's or Giemsa's method the nucleus appeared darker and showed one or more pale nucleoli, while the protoplasm took on a greenish tinge at the periphery.[6] Eosinophiles could always be found, but did not happen to appear in the differential counts. No basophile cells were seen throughout. From these remarks the differentiation of the various cells may appear to have been easy; this, however, was not the case.

Necropsy.

At the post-mortem examination (performed by Dr. Elworthy) emaciation was not excessive, even after discounting the widespread œdema. The gums were not thickened. There were small but palpable glands in the groins, axillæ, submaxillary regions, and posterior triangles of neck. The subcutaneous fat was yellower than normal, but the muscles were rather pale.

Thorax.—No remnants of the thymus were visible. Both pleuræ contained a considerable quantity of blood-stained fluid, and there were recent soft adhesions on the right side. There were many ecchymoses beneath the visceral layer of the pleura on both sides. The lungs together weighed 34 oz., both were congested at the bases and œdematous throughout. The pericardium contained a considerable quantity of bright yellow fluid. The heart weighed 10 oz. Both ventricles were dilated, especially the right. There was no tabby cat striation of the cardiac muscle. The valves were healthy, but stained yellow. The large vessels showed nothing remarkable.

Abdomen.—The peritoneal cavity contained a fair amount of bright yellow ascitic fluid. The liver weighed 53 oz. It was considerably enlarged and rather hard. The cut surface showed a reddish-brown reticulated pattern enclosing pale pinhead areas. On treating with potassium ferrocyanide and hydrochloric acid the brown pattern was quickly transformed into a dark blue one. Siderosis was also very noticeable in the spleen and kidneys, and could even be demonstrated in the lungs and cardiac muscle. The spleen weighed 7 oz. The upper pole was adherent to the diaphragm, and several spleniculi were noticed in the gastro-splenic omentum. The organ contained several white wedge-shaped infarcts. The kidneys together weighed 13 oz. They were pale and much firmer than normal. Many small punctate hæmorrhages were seen in the renal pelves. The ratio of cortex to medulla was unaltered. The stomach showed slight post-mortem digestion at the fundus, but otherwise no abnormality. The intestines were very pale and subperitoneal hæmorrhages were absent. Peyer's patches were inconspicuous, and no intestinal parasites were found.

Glands.—The glands were slightly enlarged in most parts of the body, the largest being about the size of almonds. They were dark red in colour, with the exception of a few in the mesentery, which were white.

Bones.—The marrow of all the bones examined—ribs, vertebræ, sternum, and femur—was of a deep red colour. The right femur was sawn longitudinally; its medullary cavity was entirely filled with soft red marrow.

Cultures.—A short streptococcus was grown from the heart's blood. The same organism was noticed in a stained section of the marrow.

Liver.—An analysis of the liver by Mr. J. H. Ryffel revealed the presence of iron to the extent of 0·273 per cent. of dried liver substance. In 12 cases of Addisonian anæmia recorded by Dudgeon[7] the average was 0·325 per cent., so that the percentage of iron in the present case was not much below the average for Addisonian anæmia. Hæmoglobin only contains 0·33 per cent. of iron, while the normal liver contains 0·08 per cent. according to Stockman[8]; Ryffel, however, makes it rather higher—viz., 0·14 per cent.

Summary of Microscopical Appearances.

Leucocytic infiltration was everywhere slight, yet the red lymph glands and spleen showed myeloid change. The marrow was myeloblastic and showed few red cells.

Table showing the Results of the Various Examinations of the Blood.

Date.	Red corpuscles per c.mm.	Hæmoglobin percentage (Haldane's method).	Colour index.	Nucleated red cells (per c.mm.).	White cells (per c.mm.).	Differential count.							
						Polymorphs.	Lymphocytes. Small.	Lymphocytes. Large.	Hyalines.	Transitionals.	N. Myelocytes.	E. Myelocytes.	Myeloblasts.
May 21st.	1,160,000	30%	1·3	22,800	10,200	43% 4,386	30% 3060	12% 1224	12% 1224	3% 306	—	—	A few.
,, 23rd.	1,104,000	30%	1·3	37,100	12,500	45% 5,625	28·5% 3560	13% 1625	11% 1375	2·5% 312	—	—	—
,, 25th.	1,360,000	30%	1·1	25,900	15,100	46% 6,946	30% 4530	9% 1359	11% 1661	4% 604	—	—	—
June 4th.	1,192,000	18%	0·75	33,700	12,900	43% 5,547	33% 4257	12% 1548	10% 1290	0·5% 65	1·5% 194	—	—
,, 7th.	946,000	15%	0·8	48,500	27,700	42·2% 11,689	23% 6371	18·4% 5097	11·2% 3102	1·8% 498	2·6% 720	0·4% 111	—
,, 11th.	644,000	—	—	55,800	20,200	26% 5,252	36% 7272	23% 4646	5% 1010	—	6% 1212	—	4% 808
,, 15th.	781,000	—	—	79,800	26,600	29·8% 7,927	21·2% 5640	—	3% 798	—	4% 1064	—	42% 11,172
,, 19th.	722,000	—	—	42,600	28,400	43% 12,202	20% 5680	7% 1988	1% 284	—	4% 1136	—	25% 7,100
,, 25th.	832,500	14%	0·85	183,700	87,500	13% 11,375	9% 7875	—	—	—	9% 7875	—	69% 60,375

Destruction of red corpuscles and storage of iron were the chief characteristics of the liver and spleen.

Detailed description.—Paraffin sections were treated with hæmatoxylin and eosin; blood stains were also employed, but differential staining with Mayer's acid hæmalum and eosin gave the best results. Marrow smears were stained by Jenner's method and by a combination of Jenner and Giemsa.[9] Pieces of the liver, spleen, and kidney were treated in bulk with potassium ferrocyanide and hydrochloric acid; portions were afterwards hardened and cut in the usual way. Some of the sections were mounted direct; others were counterstained with hæmalum and eosin.

Pericardial fluid.—The deposit obtained by centrifuging the pericardial fluid showed fragmented red corpuscles and nucleated cells; the latter included more lymphocytes than were present in the blood, otherwise the proportions were similar.

Marrow.—Smears showed a great preponderance of myeloblasts.[10] A differential count of 500 cells in a smear from the medullary marrow of the femur gave the following results: Myeloblasts, 72·2 per cent.; neutrophile myelocytes,

[6] For a full description of these cells vide Panton and Tidy THE LANCET, May 18th, 1912, p. 1328.

[7] Dudgeon: THE LANCET, Dec. 17th, 1904, p. 1705.

[8] Stockman, cited by Dudgeon.

[9] A modification of Pappenheim's method gave good results. Cited by Guiland and Goodall, The Blood, 1912, p. 33.

[10] Whether all the cells classed as myeloblasts were really such must remain a moot point. Large lymphocytes and hyalines were difficult to distinguish, but seemed to be present in small numbers.

7 per cent.; eosinophile myelocytes, 1 per cent.; lymphocytes, 0·2 per cent.; macrocytes, 12 per cent.; normocytes, 0·8 per cent.; microcytes, 0·2 per cent.; gigantoblasts and megaloblasts, 6·4 per cent.; and microblasts, 0·2 per cent. Neutrophile and eosinophile leucocytes were seen, but were very scanty. Smears from the head of the femur and from the other bones gave similar results. Sections of the medullary marrow showed a very cellular structure with few fat vesicles. The red corpuscles had broken down into granular débris, and there seemed to be more nucleated red cells than the smears had indicated. Myelocytes were numerous, and in other respects the smears were confirmed. No giant cells were seen.

Liver.—The central portions of the lobules showed fatty necrosis, the peripheral and intermediate zones cloudy swelling only. There was little infiltration, but slight sclerosis in the portal canals. The bulk of the organ consisted of columns of liver cells separated from one another by red corpuscles in various stages of disintegration; amongst them were many nucleated red cells, some myelocytes, chiefly eosinophile, eosinophile leucocytes, and myeloblasts. The red corpuscles were best preserved towards the centre of the lobule, becoming more and more fragmented towards the periphery; at the extreme periphery they had disappeared, but the liver cells in this situation contained much golden-brown pigment. This pigment was less marked in the intermediate zone and absent in the centre of the lobule. Appropriately treated sections confirmed this distribution and showed the corresponding liver cells to be crowded with dark blue granules. The blood-vessels showed the usual degenerative change, and there were frequently small extravasations in their vicinity; the capillaries, when visible, were distended with blood cells. Actual phagocytosis of red corpuscles was not observed, but phagocytic cells containing pigment which gave the iron reaction were fairly plentiful both inside and outside the capillaries.

Spleen.—The organ was crowded with red corpuscles and their débris. The myeloid element predominated amongst the white cells, but in spite of this the Malpighian bodies were fairly well marked. Pigment giving the Prussian blue reaction was rather unequally distributed, but some of it was visible in every field; its situation was extra- as well as intra-cellular. No giant endothelial or marrow cells were seen either in the liver or spleen.

Glands.—The red cervical and prevertebral glands were markedly myeloid and their cell content closely resembled that of the marrow itself. A white mesenteric gland approximated much more closely to the normal, but contained numerous eosinophiles, chiefly mononuclear.

Kidney.—The tubules showed marked cloudy swelling and degeneration; the glomeruli were much less affected. Infiltration was not at all marked. The Prussian-blue reaction was best shown in the débris filling the convoluted tubules, although blue granules were visible in some of the corresponding renal cells. Blue granular detritus was also noticed in many of the Malpighian bodies between the glomerulus and its capsule.

Lung.—Some of the alveoli were filled with transudate, many with red corpuscles and other blood cells, while the residue contained both transudate and blood cells. No normal alveoli were seen. The pancreas and suprarenal showed cloudy swelling and a few small hæmorrhagic extravasations; the section of cardiac muscle examined showed cloudy swelling only.

Remarks.—The diagnosis of leukanæmia was primarily made, so that a few remarks on this subject will not be out of place. Drysdale[11] regards the majority reported under this heading as atypical leukæmias, and a small minority, including Leube's, as cases of Addisonian or of secondary anæmia. Melland,[12] who has reported a case more recently, is in substantial agreement with him, and the one under consideration confirms the correctness of their views. On the other hand, Bushnell[13] is of the opinion that the term "leukæmia" is not sufficiently comprehensive in that the anæmia is markedly of the pernicious type, while the leukæmia *per se* is minimal. Against this it may be urged that in most cases of leukæmia the presence of nucleated red cells in the peripheral blood is an integral part of the disease, and the present atypical case serves to emphasise this fact and to show that the "red cell series" may be definitely and perhaps even primarily involved in the processes which underlie the production of the leukæmic state. In the absence of any definite etiological knowledge it would therefore seem better to try and maintain a rigid distinction between atypical leukæmia and Addisonian anæmia. The word "leukanæmia" might perhaps be retained in so far as it facilitates reference to the literature of these seemingly borderland cases, but on no other grounds.

I have to thank Dr. Seymour Taylor for permission to report the case. I am also indebted to Dr. C. Clarke, Dr. R. Elworthy, Dr. R. Hutchison, Dr. A. C. Inman, Dr. P. N. Panton, and Dr. F. Parkes Weber for assistance on various points.

[11] Drysdale: Quarterly Journal of Medicine, Oxford, 1907, vol. i. p. 89. [12] Melland: Ibid., 1909, vol. iii., p. 1.
[13] Bushnell: Liverpool Medico-Chirurgical Journal, 1908, vol. xxviii., p. 415.

ON THE ALLEGED DIAGNOSTIC VALUE OF THE PROVOCATIVE INJECTION OF OLD TUBERCULIN IN SUSPECTED "CLOSED PULMONARY TUBERCULOSIS."

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THIS investigation was carried out because so many cases are admitted to the hospital who present some symptoms or signs which have been deemed to be suspiciously like those met with in "early" cases of pulmonary tuberculosis. There was no point in submitting to the test those cases who expectorated tubercle bacilli except as a means of control. Though it is a matter of great doubt that cases should be called "early" so far as the term means the "early" stage of the deposit of tubercles in the lungs as opposed to what is more probable, the "early" manifestations of pulmonary disease which has been present for, may be, years in the lungs, in deference to the prevalent view, that when cases present slight signs of disease they are more likely to be "cured," evidence has been sought to establish the value or the reverse of an appeal to the use of provocative doses of old tuberculin. Up to the present time doubtful cases have been kept in the wards until repeated examinations of the sputum, provoked or not by means of potassium iodide, failed to establish evidence of pulmonary tuberculosis. If tubercle bacilli were never shown to be present in the sputum, time was allowed to elapse during which signs or symptoms disappeared, and then the patients were discharged as "unproven" so far as the existence of pulmonary tuberculosis was concerned. This has entailed a considerable drain on the beds available in the hospital for the treatment of established tuberculous disease.

Mechanism of the reaction.—Before entering upon the details of the tests, &c., it is necessary to express in terms which are familiar to the students of immunity and anaphylactic reactions the processes by which presumably any positive results could be brought about. This involves a consideration of the three forms of receptors which have been invoked by Ehrlich and his school. The receptors involved in the test belong to what Ehrlich speaks of as receptors of the third order—i.e., amboceptors which, on the one hand, are capable of attaching to themselves complement, and, on the other, tuberculin. These amboceptors are supposed to possess a special "ferment" action which brings them somewhat into line with Ehrlich's second order of receptors which include agglutinins and precipitins. Ehrlich's simple or first order of receptors do not in any way enter into the reaction. It must further be supposed that the amboceptors entering into this test remain "sessile," that is, remain attached to the cells from which they develop; they may also become "free," a supposition which must be accepted in order to explain some anomalies to which attention will be called later. The cells in the immediate neighbourhood of a tuberculous focus, say in the lungs, must be looked upon as being the ones which are most richly endowed with the above "sessile" receptors, and the theory of a tuberculin reaction requires the belief that when tuberculin is injected into the

body it attaches itself to one of the affinities of the amboceptors. There is thus brought about a conjugation of four elements: (1) a tissue cell, (2) a ferment, (3) complement, and (4) tuberculin.

1. *Expectoration of tubercle bacilli.*—It is now possible for the ferment, aided by the complement and tuberculin, to operate through the pedicle by which the amboceptor is attached to the cell upon the cell itself. This cell becomes tumid, undergoes a process akin to digestion, and its architecture is destroyed. The débris and that from other cells which have undergone similar disintegration contribute to form "sputum" which may or may not be expectorated. Tubercle bacilli, pus cells, elastic tissue, &c., are expectorated as well, and the tubercle bacilli are able to be recognised and the diagnosis of pulmonary tuberculosis to be established.

2. *Focal reaction.*—But tubercle bacilli may not escape in the expectoration, and all that may happen is that a colliquative change has occurred in the focus of tuberculosis in the lungs, and the respiratory movements may be able to so stir up the liquefied tissue as to reveal to the stethoscope signs such as râles and rhonchi at the seat of disease (focal reaction). These two reactions (1 and 2) may be deemed sufficient to allow of the diagnosis of pulmonary tuberculosis, tubercle bacilli occurring in the sputum being accepted as an infallible proof of tuberculosis of the lungs, and the specificity of tuberculin being also accepted; no other bacterial derivative would fit the amboceptors above postulated but tuberculin.

3. *Rise of temperature.*—The liquefaction of cells possessed of tuberculin amboceptors leads also to a rise of temperature. But as some other focus of tuberculosis other than that in the lung is capable of provoking a rise of temperature, this phenomenon cannot be said to be of any diagnostic value in the inquiry which has been carried out—viz., of establishing the existence of pulmonary tuberculosis. Observations were made on the temperature merely as a guide to the better limitations of the reaction provoked. A great rise of temperature served as a warning that whatever might be the size of the pulmonary focus, if present at all, the sessile receptors available in the whole body were so numerous that the larger doses of tuberculin should be prohibited from being used in the individual under consideration.

4. *Local reaction.*—Similar remarks can be applied to what has been called the "local" reaction or "needle" reaction at the site of injection. Here, again, no reliance was made upon the local reaction, because that, too, might be dependent upon the large number of sessile amboceptors present in the subcutaneous tissues but brought into existence by a focus of tuberculosis far removed from the lungs. Marked local reaction served as a warning of the same order as the rise of temperature.

5. *General symptoms.*—Lastly, the intoxication which follows the liquefaction of a large number of cells besides causing a rise of temperature, also may cause what are spoken of as general symptoms such as headaches, anorexia, rheumatism, debility, &c. These phenomena, like the rise of temperature and the local reaction, though accepted as valuable warnings, served the purpose of the research in no other way.

Dosage.—As a rule this began in adults at 0·5 milligramme of old tuberculin; if no reaction occurred during the following two days, subsequent doses increasing step by step from 1·0, 3·0, 5·0 up to 10·0 mg. were injected. It was rare for none of these doses to produce reaction such as rise of temperature, local reaction, or general symptoms. Doses within these limits were followed in some cases by the appearance of tubercle bacilli in the expectoration and "local" signs in the lungs. This progressively increasing dosage of earlier workers has been followed rather than the system of repeated similar doses advocated by Löwenstein.

The clinical investigations.—All the patients were non-febrile; they were kept in bed continuously; the temperature was taken two-hourly, or four-hourly, for some 12 or 16 hours before the injection and from 48 to 72 hours after the injection. No increase of dose was given until any rise of temperature produced by the previous dose or any symptoms had subsided. After each dose, as often as possible, observations were made on all five of the above described reactions, though No. 4 was not followed very critically. Observations were made on 61 different individuals.

Controls.—It was considered necessary that the following controls should be made:—

1. To study the focal signs produced by the provocative use of old tuberculin in established cases of pulmonary tuberculosis—i.e., in cases in whom there were signs in the lungs and T.B. in the sputum. Five cases were examined. Results: Focal signs retrogressed in 2; focal signs were maintained unaltered in 2; and focal signs retrogressed in some places and advanced in others in 1.

2. To study what proportion of cases of pulmonary tuberculosis, after showing no T.B. in the expectoration at the first examination, revealed this afterwards without the use of old tuberculin. Eighty cases were examined. Results: 70 gave positive results at the first examination; and 10, i.e., 12½ per cent., gave positive results at subsequent examinations only.

3. To study the variation of râles and rhonchi from day to day in (1) non-tuberculous cases, and (2) tuberculous cases.

(*a*) Nine cases were studied, including examples of asthma, bronchitis, hypertension, bronchiectasis, and aneurysm, none of the cases being tuberculous. One case of bronchiectasis examined day by day showed a reduction of signs on eight days, a restoration to the signs first noted on admission on five days, and an excess of signs on one day. One case of aneurysm showed a reduction of the initial pulmonary signs on each of four later examinations. The same occurred in one case of hypertension, and another case of hypertension showed on the second examination an increase of signs which were reduced again on the third, fourth, and fifth examinations. Two cases of asthma showed a notable reduction of signs after a few days—one till they vanished entirely, the other eventually showing a recrudescence of signs. Another case of asthma showed but slight variation of signs in each of the above examinations. Still another case of asthma showed during 13 examinations three periods of great increase of signs above the initial ones, with falls between to, or a little below, the initial level. One final case of asthma, which revealed the interesting localisation on occasion of râles and rhonchi at one apex, showed first a fall of signs and then an increase to the original level.

(*b*) Ten cases of pulmonary tuberculosis were studied in order to note any changes occurring spontaneously—i.e., without the use of old tuberculin. Observations were made at varying intervals. In the first case, the signs in the right lung, observed 14 times, showed reduction on each occasion; the left lung, as often observed, showed unaltered signs on six occasions and an increase of signs on eight occasions. In a second case examined on six occasions the right lung showed first an increase and then a decrease of signs, and finally, a restoration to the original sign; the left lung a maintenance of signs on the first three occasions and then a reduction on three occasions. The third case a reduction of signs on four occasions, then an increase above the original, and finally a fall below the original signs in the right lung; the left lung at the same time showed an increase in signs on each of the six examinations and a fall to the original on one occasion. The fourth case, examined 11 times, showed a reduction of signs in both in all but the last occasion, when there was an increase in the right lung beyond the signs first noted. The fifth case showed during nine examinations a diminution, then an increase, and then a diminution of signs in the right lung; in the left lung the signs were practically stationary. The sixth case showed during eight examinations an increase, then a fall below the original signs in the right lung; the left lung showed after an increase of signs on three separate days a fall to the original. In the seventh case the signs in the right lung during 11 examinations showed no alteration, whereas the left lung on the sixth and seventh days showed an increase of signs which subsequently fell to the original level. The eighth case during eight examinations showed in the right lung first a fall and then a rise and a final fall of signs, the left lung showing a variable fall of signs. The ninth case showed during six examinations a decrease of the signs in both lungs. The last case examined on six occasions showed an increase of signs in the right lung and a fall in the signs of the left lung. This extreme variability of signs, apparently spontaneous and independent of the use of tuberculin, is well enough known, and the record is a necessary though disconcerting one in connexion with the inquiry undertaken.

Results of Observations of 61 Cases, after Provocative Injection of Old Tuberculin in whom no Tubercle Bacilli had ever been found.

1. *Tubercle bacilli provoked in the sputum.*—Four cases—i.e., 6·5 per cent. The value of this observation is reduced to nothing by the knowledge brought out in Control No. 2, which showed that cases of tuberculosis of the lungs would reveal T.B. in subsequent examinations when its first examination was negative (12½ per cent.).

2. *Production of focal signs.*—Focal signs developed or were increased in 14 cases after the use of tuberculin—i.e., in 22·9 per cent. So far as the observations made on frank pulmonary tuberculosis are concerned under the influence of provocative doses of tuberculin (Control No. 1), this result speaks in favour of the provocative use of tuberculin. But so far as the observations on spontaneous changes in frank tuberculous cases are concerned (Control No. 3), in which it is seen that in 20 lungs examined a spontaneous increase of signs occurred in 9, a decrease in 9, and no change in 2, even these favourable figures (22·9 per cent.) must be accepted as of no value, and the spontaneous changes noted in 9 cases of lung disorders (Control 3, *a*) other than tuberculosis seem further to show that these results are not necessarily due to the tuberculin.

It must be noted that the focal signs in 10 out of the 61 cases furnished by injection persisted for some days. This speaks against the use of the test, as real damage may have been done to the patient. As, however, eventually all these focal signs retrogressed, it may be argued that the dosage was safe, and so far as signs go no patient suffered permanently. The discomfort entailed when marked reactions were produced was in certain cases so great that the provocative use of old tuberculin would be impossible in private practice.

Lastly, it was found, as so often happens, that injection of old tuberculin in established cases of pulmonary tuberculosis failed entirely to produce any one of the five elements of a tuberculin reaction; presumably the amboceptors above referred to as "free" fixed the tuberculin; but by reason of their detachment from cells were unable to lead to the dissolution of the latter.

In *résumé*, it appears to me that nothing can be hoped for from the provocative use of old tuberculin in the way of helping to detect cases of so-called "closed pulmonary tuberculosis."

The above observations have been carried out upon cases under the care of Dr. H. Batty Shaw; when possible they were checked by him.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF FRACTURE OF THE PATELLA IN A PATIENT SUFFERING FROM LOCOMOTOR ATAXIA.

BY WALTER G. SPENCER, F.R.C.S. ENG.,
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IN 1890, at the age of 42, the first signs of tabes dorsalis appeared in this patient and these so increased as to prevent him from following any regular occupation. But at a certain point the disease appeared to be arrested, so that he was able to lead the life of a sedentary student. On Oct. 24th, 1907, he slipped in descending from an omnibus. He did not know that he had hurt his left knee until he felt the upper fragment of the patella in front of the thigh. He was seen by me in consultation with Dr. G. J. Eady. The left knee-joint was tensely distended and there was a transverse fracture of the patella at about the middle, with the upper fragment drawn upwards for three inches. This observation was confirmed by an X ray photograph. As a result of the consultation it was agreed to advise the patient to submit to operation for the following reasons. The wide separation of fragments if allowed to continue must ensure a complete loss of power in the limb. Being ataxic, the patient could make but little use of a stick, and would thus be rendered helpless and practically confined to a chair. No case, however, was known to me in which the patella had been wired in an ataxic subject, though the experience of the joint changes, and indeed of fractures, pointed to the supposition that there would be no lack of ossification. Moreover, the patient's vascular system did not give any contra-indication to an operation under general anæsthesia. The fractured patella was therefore wired by me on Nov. 6th, and a month later he was able to reside under the care of a medical man. On Jan. 29th, 1908, he was able to stand to do exercises; he could then bend the left knee to a right angle. But on Feb. 10th, while holding on to the back of a chair by one hand in the course of performing certain exercises, he lost his balance and fell with the left leg doubled up under him. This caused a fracture of the left fibula in its lower fourth and a diastasis of the patella fragments along with much effusion into the knee and bruising of the leg, causing bullæ to form. But there was no important separation of the patella fragments, which were practically still kept approximated by the wire, and no separation of the fibula fragments. At the time the ataxia seemed to be increasing, and the speech to be becoming muffled. A year later—namely, March, 1909—during which time the patient had been under Dr. Eady's care, he was found in a much more favourable state. The patient was able to walk about, both indoors and out, by himself, and could go up and down stairs. He could get in and out of an omnibus or motor-cab and go to the theatre. On several occasions he had walked three-quarters of a mile. The fracture of the fibula had united well by bone. The second accident had disturbed and "started" the silver wire sutures, but they had become almost embedded in bone, and there was firm union of the patella with separation of the fragments to less than a finger's breadth. This union appeared to be partly fibrous and partly bony. At that date the tabetic symptoms were quite in abeyance. The patient, I am informed, has schooled himself rigorously to overcome difficulty in walking, and now, five years after the accident, can get to and from his club and take up the thread of a very quiet life.

Portland-place, W.

A CASE OF PUNCTURED WOUND OF THE ABDOMEN, PENETRATING BOTH WALLS OF THE STOMACH, WHICH PRESENTED MISLEADING SYMPTOMS.

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A SCHOOLBOY, aged 10 years, while at play fell upon a spike which inflicted an abdominal wound. He was able to walk home with assistance, and four hours later was removed to the Royal Infirmary as a precautionary measure.

On admission the boy was found to have a small punctured wound in the epigastrium, a little to the right of the middle line. The temperature and pulse were practically normal. There was no sign whatever of shock, the patient feeling well and even cheerful, save for tenderness over the region of the wound. Shortly after admission he became sick and vomited a large quantity of light-coloured fluid which contained no blood. On two occasions a careful examination of the wound was made with a probe by the house surgeon, who was aware of the difficulty in determining the depth of such wounds, and as the probe only went in a short distance it was concluded that the abdominal cavity had not been involved.

As rigidity and tenderness on the right side of the abdomen developed after admission the patient was anæsthetised and examined. There was now no difficulty in passing the forefinger through the wound, which had not yielded a passage to a probe, into the abdominal cavity. The wound was opened up by a vertical incision, a considerable quantity of effused blood escaping as this was done, and the anterior wall of the stomach, lying immediately underneath, was examined. This wall was found perforated, the lumen of the stomach being invaded, and accordingly, after the puncture had been treated, the stomach, with colon and omentum, was turned up as for posterior gastro-enterostomy and the

posterior wall examined. This wall had also been perforated, the wound extending into the mesocolon and involving a fairly large vessel. The damage here was likewise repaired; nearly a pint of effused blood was removed in all; the parts were replaced, and a packing of gauze, moistened with sterile camphorated oil, was introduced, and the wound partially closed. Save for an attack of bronchitis the patient made an uninterrupted recovery.

The points to which attention is particularly directed as tending to mistaken diagnosis are: 1. The difficulty in gauging the depth of a punctured wound by means of a probe. Probably in some instances muscular and fascial planes slide over one another after the accident and occlude the passage of an instrument inwards (and of effused blood outwards). The comparatively sharp point of the probe in all such cases is apt to become engaged in the tissues at the sides, and thus mislead one as to the depth of the wound. the finger forms the most trustworthy means of examining These wounds. 2. The entire absence of shock. The patient's practically normal pulse and temperature and cheerful demeanour were very misleading as to the serious nature of the wound. 3. The absence of blood from the vomit, notwithstanding the penetration of both walls of the stomach by fairly large punctures, and the consequent invasion of the lumen.

Glasgow.

Medical Societies.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.

A CLINICAL meeting of this society was held at the West London Hospital on Jan. 3rd, Dr. G. P. SHUTER, the President, being in the chair.

Before opening the proceedings the PRESIDENT referred with regret to the retirement of Mr. W. Bruce Clarke, a late President, and he was unanimously elected an honorary member of the society in recognition of the active interest he had taken in its affairs.

The following cases were then examined and discussed:—

Mr. OSWALD L. ADDISON showed a case of Cirsoid Aneurysm in a boy aged 7 years. A small swelling appeared on the side of the head 18 months ago, and during the last few months it had increased in size. On the corresponding side of the head, over the right temporal muscle, there was a large tortuous vessel about 2 inches in length running vertically. Pulsation was marked and the vessel wall felt much thickened.

Mr. ASLETT BALDWIN showed a boy in whom he had reduced successfully a Congenital Dislocation of the Left Hip-joint by Lorenz's method. At the age of 6 years the patient was admitted to the hospital in September, 1911, with very marked lameness. The joint ends were manipulated under anæsthesia to stretch the muscular ligaments, and in the following month the dislocation was reduced. The limb was then put up in plaster-of-Paris for six months and the boy allowed to get about. At the end of this period the plaster was reapplied for another two months. The hip now appeared to be quite sound. Movement was free, he walked and ran well, and was able to play football. Two radiograms illustrated the condition before and after reduction, and in the later picture the head of the femur was opposite but apparently not in the acetabulum. It was explained, however, that this was due to the fact that the cavity was filled with fibrous tissue at the time the radiogram was taken. After some months this fibrous tissue was absorbed by the pressure exerted by the head of the femur, and the latter entered into its natural position in the socket.

Dr. T. C. STOREY showed (for Dr. H. J. DAVIS) a case of Epithelioma of the Middle Ear. The patient was a man, aged 58, with a long history of discharge from the ear. Last November a polypus was removed from the left ear, and sections proved the growth to be an epithelioma. The ear was then curetted, the pathological report confirmed, and a more extensive operation undertaken. The middle ear was found to be full of growth which had invaded the attic roof and the dura mater covering the temporo-sphenoidal lobe; it also filled the tympanic opening of the Eustachian tube. The growth was curetted away as far as possible, and as hæmorrhage was very free the wound was packed and a drain inserted. The parotid gland now appeared to be affected, there was slight facial paresis, considerable pain corresponding to the distribution of the auriculo-temporal and inferior dental nerves, and nystagmus to the right with attacks of vertigo had developed recently. The patient was losing weight and his mental faculties were becoming deficient. Dr. Storey remarked that epithelioma of the middle ear was a rare condition, few cases were reported, and in looking up the literature he found that the growths were said to originate usually from the tympanic end of the Eustachian tube and to follow trauma, but in this case there was no history of an injury.

Mr. N. BISHOP HARMAN showed a case of Congenital Deformity of both Upper Extremities and of the External Recti Muscles of each Eye in a young man aged 16, the only child of a father who had similar deformities of the hands. Both were shown by Dr. C. W. Chapman at the Clinical Society of London in 1900, but the ocular defect of the son was not recorded. In the right hand a slender "finger" with three phalanges and no thenar eminence replaced the thumb, this abnormal "finger" being flexed to the maximum and having little movement. The condition of the father's right hand was similar. The left extremity of the young man was much more defective; radius absent, ulna short and curved, and three fingers only with no trace of a thumb. In the father the left upper extremity resembled the right, but with partial fusion of the abnormal "finger" to a strong index finger. The absence of the external recti muscles referred to above was probably more apparent than real, and it was probable that the muscles were in the embryonic position and condition, represented by small slips at the back of the eye close to the optic nerve. The whole of these anomalies seemed to be due to arrest of development, just as the production of hare-lip.—In discussing this case Dr. SEYMOUR TAYLOR referred to the subject of "maternal impressions" as a cause of congenital deformities, and Mr. BISHOP HARMAN replied that here there were two generations showing a similar but progressive defect in development. Since it was hereditary it was due to a germ-plasm defect, and a maternal impression that could produce this inheritance must have occurred when the germ-plasm which grew the elder of these two men was laid down. This meant that the maternal impression affected the grandmother. The first generation "sinned," and the second received bad germ-plasm which figured in the third and fourth generations.

Mr. BISHOP HARMAN also showed a case of Monocular Albuminuric Retinitis in a woman, aged 63. She had some degree of hemiplegia a year ago and was now complaining of eye trouble. In the right eye the macula was dotted with white patches of exudate, with minute hæmorrhages, and the disc was blurred. The left eye was free from changes with the exception of marked angio-sclerosis, which was present in both eyes. Having been asked why one eye only was affected in a general disorder, Mr. Bishop Harman suggested the possibility of the affected eye having had some long-standing defect, such as an error of refraction, since he had noticed that when one eye has had poor vision for many years degenerative changes were apt to appear in that eye earliest.—In view of the gloomy prognosis associated with albuminuric retinitis Dr. SEYMOUR TAYLOR asked for an estimate of the probable duration of life in this elderly patient. Was the condition as grave a sign in old people as in early adolescents?—Mr. BISHOP HARMAN replied that the prognostic significance of albuminuric retinitis must be answered by a reference to the age of the patient. In young subjects when retinal changes appeared they appeared early and were of serious import. In the elderly such changes were much later in appearance and did not imply so grave an issue. He had watched some cases for several years.

Dr. E. ARTHUR SAUNDERS showed a case of Paraplegia after Whooping-cough in a child aged 5. The paralysis developed a year ago, was said to supervene on a paroxysm of coughing, and was of the flaccid type. The legs were wasted, the knee-jerks, Achillis-jerks, and plantar reflexes were absent, but the child could move the toes slightly on one side. The sphincters were unaffected, and the abdominal and cremasteric reflexes were present.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimen.—Management of Difficult Labour.

A MEETING of this society was held on Dec. 11th, 1912, Dr. JOHN LINDSAY, the President, being in the chair.

The PRESIDENT showed a fresh specimen of an Abortion Sac which exhibited a marked disproportion between the size of the embryo and the containing sac.

Professor R. JARDINE gave a practical demonstration on the Management of Difficult Labour, showing the various manipulations on the phantom and exhibiting the several instruments required. He also showed numerous specimens of fœtal abnormalities, and in particular a full-sized pregnant uterus with Bandl's ring and rupture of lower uterine segment, removed post mortem. Professor Jardine dealt first with occipito-posterior presentations, explaining the mechanism in cases which rotate normally. In non-rotated cases the method of inserting the hand and producing rotation to the front, while the anterior shoulder is pushed round by the external hand, was demonstrated, and also in cases where the shoulder could not be felt externally on account of obesity the method of producing rotation by pushing the fingers of the hand in the vagina upward and completing the movement from the vagina. Face presentations were next demonstrated. Early flexion of the head by the hand, the fingers over the occiput and the thumb on the forehead, was advocated. When a tumour of the neck exists the treatment is version. Version should be performed early. When the case has become malrotated with the chin backward, the only method of delivery except in the case of small children is craniotomy done through the orbit or mouth. The difficulties encountered in impacted breech cases where the membranes have ruptured and the uterus has become moulded round the fœtus were explained. The upper uterine segment retracts, the lower segment becomes thinned out, and the retraction ring grips the child round the chest or abdomen, the heels being above the ring. In these cases the patient is deeply anæsthetised and one foot is brought down; this is generally sufficient to relieve the pressure and delivery can be effected by traction on the foot. In transverse cases early treatment by version must be done. If impaction has occurred or where an arm is down, version, unless done by an expert, is dangerous and should not be attempted by a practitioner on account of the probability of rupture of the uterus occurring. In these cases the child is generally already dead, and decapitation must be performed. In performing decapitation Ramsbottom's hook may be pushed through the lower uterine segment. Professor Jardine showed his modification of Braun's hook, which has a small curve and a sharp cutting edge. When an arm is down it may be necessary to cut through the chest from the upper side of the neck to the lower axilla. Bandl's ring as a cause of obstruction was discussed. Two cases were mentioned where the ring formed a distinct ledge in front of the presenting head. The treatment of these cases is Cæsarean section. Sometimes cases are met with where the ring is firmly contracted round the neck, the head of the child being free; early rupture of the membranes has taken place in these cases. Often embryotomy is necessary in dealing with this condition. The ring may form in the third stage of labour and cause retention of the placenta above it—so-called hour-glass contraction of the uterus. Contracted pelvis was next considered. In these cases the question is not so much the diameter in actual inches; rather is it, Will the given head get through the particular pelvis? These cases should be diagnosed early and Cæsarean section arranged for when necessary. In some cases the anterior parietal presentation will come through, whereas in a pelvis of the same size a presenting head of similar size will not come through if the presentation is a posterior parietal one. It is important to diagnose these varieties of presentation as the forceps may be quite effectual in the anterior, but delivery by the forceps impossible in the posterior. In anterior cases the forceps in its traction simulates nature's method, while in the posterior parietal presentation the instrument by pulling down the anterior half of the head makes matters worse. In posterior presentations version should be done, and that early, or, if possible, the posterior presentation should be changed into an anterior one by manual manipulation, the posterior parietal bone being pushed up so as to allow the anterior to come down. Forceps may then effect delivery. The methods of performing craniotomy were described and the instruments demonstrated; the value of Professor Jardine's combined instrument for crushing and extraction was pointed out.

A vote of thanks was proposed by the PRESIDENT for the clear and practical demonstration given, and Professor JARDINE replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Myomatous Uterus.—Polypus Complicating Inversion of Uterus.—Complications of a Hysterectomy.—Fibro-Sarcoma of the Ovary.

A MEETING of this section was held on Dec. 13th, 1912, Dr. A. J. HORNE, the President, being in the chair.

The PRESIDENT showed a specimen of Myomatous Uterus removed from an unmarried woman aged 30. Four years ago the patient had a bad attack of diarrhœa, lasting about three weeks. A large swelling was noticed in the lower part of the abdomen, and she complained of great irritation just above the symphysis pubis. The swelling gradually increased in size for about a year, and then grew more rapidly. In the morning the lump was generally on the side on which the patient lay during the previous night, and when she leaned to one side she could feel the lump move to the opposite side. Menstruation was regular and normal in quantity. On admission the patient looked healthy, the abdomen appeared very large, and equally so on both sides of the middle line. There was dulness over the whole part. When first seen the tumour was in the middle line and presented few characteristic features, making diagnosis difficult. It was impossible to make a satisfactory vaginal examination without anæsthesia. From the mobility of the tumour it was thought to be a fibroid, although menstruation was regular. When the abdomen was opened large veins were to be seen all over the tumour, so that there was a doubt as to whether it was a case of pregnancy. It was therefore thought necessary to open into the central line of the tumour before removal, when it was found to be a myomatous uterus. The tumour weighed 8¼ lb.—Professor ALFRED J. SMITH said that if the uterus contracted it was pregnant, and if it did not it was non-pregnant. A sponge out of hot water pressed over either cornu of the uterus would help to stimulate the contraction.—Dr. R. D. PUREFOY observed that the case demonstrated a point of importance, even when there was an opportunity for ocular inspection—viz., the impossibility of saying whether a tumour was solid or cystic. The large veins over the specimen also probably increased the difficulty of diagnosis.—The PRESIDENT, replying to the remarks, said that he had held the tumour in his hands for a considerable time, but felt no contractions or fœtal movements, yet he was not convinced that it was not a pregnant uterus. He thought the idea of applying hot cloths to encourage contraction very useful.

Dr. E. H. TWEEDY described a case of Polypus complicating Inversion of Uterus and Illustrating the Difficulty of Diagnosis. A half-witted union patient was sent to him far advanced in anæmia and shock. Her condition was so serious that he did not dare to examine her for at least eight days. Ergot and stimulants were administered and the vagina was plugged. At the expiration of a week he found a round tumour protruding to within an inch of the vulva. It bled easily. Under anæsthesia he failed to make a diagnosis by any of the recognised methods. The cervix could not be felt. Rectal and bimanual examination afforded no information. He, however, established the diagnosis by a method not before suggested. Two fingers were passed into the vagina above and below the tumour, and these were placed on its pedicle. The feeling of the latter was unmistakably that of uterine tissue. He thought it was worth remembering that if there was inversion of the uterus with a polypus the pedicle would give this characteristic feel. He removed the myoma, and in doing so opened a cyst containing fluid under great tension. There was very severe bleeding. The uterus was easily inverted with three bullet forceps.

Continuous rectal irrigation was afterwards kept up for 24 hours.—The PRESIDENT said the case showed one of the interesting effects of polypus complicating inversion. He mentioned that polypus complicating inversion was very rare, and the points raised as regards diagnosis were of great importance.—Dr. B. A. H. SOLOMONS said it seemed to him that the treatment accorded to the patient before operating had saved her life, whereas immediate operation would probably have killed her. The severe constitutional symptoms often associated with uterine polypi, both large and small, were never dealt with sufficiently in text-books. He wondered if a diagnosis might have been more easily made by splitting the perineum, whereby the operation itself would have been facilitated.—Dr. J. SPENCER SHEILL thought a point of interest was the reference to the palpation of the pedicle of the tumour. He found that the uterus felt like a collapsed tube, whereas a tumour was not hollow and more resistant.—Dr. PUREFOY said that where polypus had given rise to inversion, especially where the polypus was sessile, it became exceedingly difficult to determine how much of the tumour was polypus and how much uterus. He had had three cases where the inversion complicated parturition, and some months elapsed before they came under treatment. In each case the reposition was effected by steady pressure applied to the fundus, while the cervix was held by two bullet forceps. He had shown at a meeting of the section a simple repositor which had proved very helpful.—Dr. TWEEDY replied.

Dr. TWEEDY also showed a specimen of Sloughing Myoma, the removal of which per vaginam caused acute inversion of the uterus.

Professor SMITH described a case in which, having performed a Subtotal Hysterectomy, he was making the peritoneal toilette, when his finger was pricked by some sharp instrument. On investigating he found the point of a needle sticking through the wall of a small intestine. Searching further more needles were found, some lying in the omentum, others projecting from the wall of the intestine, but covered by a smooth covering, as if a diverticulum had been formed from the intestinal wall. The appendix, which was markedly hypertrophied and congested, was removed. An X ray photograph revealed two needles and one pin in the lumen of the appendix. The patient complaining of more abdominal pains, aggravated on pressure, was skiagraphed. Two of the plates located three needles, one on the right side evidently broken, another on the left side at pelvic brim, and a third somewhere about the pubis. All three needles were successfully removed. In all, ten needles and one pin were found. It was remarkable that so many needles could be swallowed and perforate the intestinal wall, giving rise to so little disturbance, and the presence of three sharp-pointed metallic bodies in the appendix was unique.—The PRESIDENT, Dr. PUREFOY, Dr. H. JELLETT, and Dr. R. J. ROWLETTE discussed the case.

Dr. GIBBON FITZGIBBON read a paper on a case of Fibro-Sarcoma of the Ovary removed from a patient aged 42. The tumour had probably existed for more than three years, and weighed over 10lb. He thought that all solid tumours of the ovary should be looked upon as malignant at the time of operation, and the other ovary removed.—Dr. JELLETT referred to the after-history of a case of sarcoma of the ovary on which he had seen Sir William Smyly operate. The tumour was entirely capsulated. The patient, who was aged 19 or 20, went on very well for a short period, but then began to get worse. Her temperature eventually rose to 106° or 107° F. She then lost control of the lumbar centres, and a tumour appeared under the skin over the lumbar spine. She died, and it was found that secondary growths had developed behind the glands of the peritoneum and had cut through the spinal column. He agreed with Dr. FITZGIBBON as to the removal of both ovaries in cases of malignant tumour affecting one, and also in treating all solid tumours of the ovaries as malignant at the time of operation.—Dr. T. NEILL referred to a case in which Dr. F. W. Kidd, while Master of the Coombe Hospital, removed two sarcomatous ovaries. The case was reported in the Transactions (Vol. XVIII., 1900, p. 297).—Professor SMITH said his experience was that ascites was generally associated with malignant tumours. He was firmly convinced that whenever one or two solid ovarian tumours were found the uterus should also be removed.—Dr. PUREFOY said the case appealed to him with regard to three points: (1) He had noticed that in the early stage of their growth these tumours were associated with good health; (2) the difficulty of distinguishing between solid ovarian tumours and fibroid with long pedicle; and (3) the invariable recurrence which followed in the case of such tumours. He could not, therefore, adopt the view of Professor Smith—that when the tumour was suspected of being malignant the uterus should be removed, as it exposed the patient to increased risk without any compensating advantage. He considered, however, that recurrence might be delayed if the second ovary was removed.—Dr. ROWLETTE said that a point of help in judging during operation whether a tumour was malignant or not was that malignant tumours, when incised, presented as a rule a peculiar translucent and homogeneous appearance, innocent tumours being more opaque. He pointed out this characteristic in the specimen shown.—Dr. FITZGIBBON replied.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held at the Royal Naval Medical School, Greenwich, on Dec. 11th, 1912, this being the first occasion on which the members of the society have met in this new institution. Fleet-Surgeon P. W. Bassett-Smith, C.B., R.N., the President, took the chair.—Fleet-Surgeon R. C. Munday, R.N., read a paper entitled "Persian Gulf Experiences," in which he gave a very interesting account of the anxiety of the Afghans and other warlike people to obtain efficient weapons and of the means they adopted to do so. The Governments of India and of Persia being anxious, however, to prevent the indiscriminate importation of arms, measures were taken to suppress the traffic, and the work of this fell upon the British Navy in conjunction with an Indian military force. As the arms were imported by sea, a blockade was established in 1909, and a large number of dhows laden with arms and ammunition were subsequently captured. Expeditions on shore were also successfully carried out with a view to the capture of stocks of rifles and ammunition which had already been landed and stored in various places. This work, which was on several occasions actively opposed, was necessarily carried out under circumstances of great hardship, and resulted in a number of casualties in action and a considerable amount of sickness in the force employed. The speaker gave a full account of the measures taken in preparation for the treatment of the sick and wounded, and also of the means employed to prevent, as far as possible, outbreaks of sickness, sore feet upon the march, &c. He touched also upon the nature, prevention, and treatment of the diseases usually met with during service in the Persian Gulf.—The subsequent discussion was led by Surgeon-General Sir W. L. Gubbins, Director-General of the Medical Department of the Army, and taken part in by many other officers.—A vote of thanks to Fleet-Surgeon Munday for his instructive and interesting paper was unanimously accorded.

ERRATUM.—In the report of the Electro-therapeutic Section of the Royal Society of Medicine in our last issue, p. 30, the name of Dr. Sidney Russ should have appeared, instead of that of Dr. C. Russ.

ROYAL INSTITUTION.—On Tuesday next, Jan. 14th, at 3 o'clock, Professor Bateson begins a course of six lectures at the Royal Institution on the Heredity of Sex and Cognate Problems; on Thursday, Jan. 16th, Mr. Seton Gordon delivers the first of two lectures on Birds of the Hill Country; and on Saturday, Jan. 18th, Dr. H. Walford Davies commences a course of three lectures, with musical illustrations, on Aspects of Harmony: (1) Chord Progression, (2) Added Dissonance, (3) The New Whole-tone Chord and its Predecessors. The Friday evening discourse on Jan. 17th will be delivered by Professor Sir J. J. Thomson on Further Applications of the Method of Positive Rays; on Jan. 24th by Professor J. O. Arnold on Recent Advances in Scientific Steel Metallurgy; and on Jan. 31st by Mr. George M. Trevelyan on the Poetry and Philosophy of George Meredith.

Reviews and Notices of Books.

Internal Secretion and the Ductless Glands. By SWALE VINCENT, M.D.Lond., D.Sc., Professor of Physiology in the University of Manitoba. With a Preface by Professor E. A. SCHÄFER. Illustrated. London: Edward Arnold. 1912. Pp. 464. Price 12*s.* 6*d.* net.

THE author explains that the subject has occupied a large share of his time and energy for more than 15 years. The main outlines of the present work have been previously published in German in the *Ergebnisse der Physiologie*. We welcome the contribution in its English garb. The work contains nearly 100 illustrations, chiefly histological and anatomical, and some blood-pressure tracings and plates in colour. There are no illustrations showing the general appearance of persons suffering from cretinism, acromegaly, and other diseases associated with modified functions of certain ductless glands, but practically all we know definitely as to the functions of these glands is the product of the last quarter of a century. The literature is something appalling in extent. The author gives 40 pages to his bibliography, and that this space is needed is shown by the fact that Biedl devoted 125 pages to titles of papers alone, and that was in 1910. For readers of German will at once compare it with the very thorough work on "Innere Sekretion" published by Professor Biedl in 1910, which was reviewed in THE LANCET of April 1st, 1911, p. 885.

After a short introduction the author defines and delimits the term "internal secretion," which he regards as consisting "in the preparation and setting free of certain substances of physiological utility (the raw materials of which are supplied by the circulating blood) by certain cells of a glandular type; the substances set free are not passed out on a free surface, but into the blood stream." This, of course, excludes the products of ordinary and special metabolism. The next chapter deals with the general methods of investigation, special attention being paid to the importance of pathological methods and pathological facts. Some results obtained by the methods of extirpation, grafting, feeding, and injections (subcutaneous and intravenous) are stated, and after a reference to "hormones" about 40 pages are given to the internal secretions of the liver, pancreas, kidney, intestinal and gastric mucous membrane, and the reproductive organs. As to the much discussed islets of Langerhans, the author thinks that all the evidence appears to prove conclusively that they are not organs *sui generis*, but are an integral part of the pancreatic tissue. In referring to secretin and pancreatic juice, he says: "The external secretion of the pancreas is the result of the internal secretion of the duodenal mucous membrane." In regard to the reproductive organs, the work of Marshall is frequently referred to. So far, the author's work is chiefly a selection and compilation of what is known, or supposed to be known, regarding the internal secretions of the organs mentioned.

About 140 pages are given to the adrenals, and in the introductory remarks reference is made to Biedl's excellent historical account of these glands. The two salient facts are Addison's discovery and the fact of the blood-pressure-raising activity of the extracts of the medulla announced by Oliver and Schäfer in 1894. An important step was the isolation in crystalline form of the active principle of the medulla. As to the physiology of the cortex we know practically nothing. Next follows an account of the comparative anatomy and histology of these bodies. The illustrations strike us as well drawn, but are hardly sufficiently bold. After a short account of Addison's disease the author states that "pathologists have never given due consideration to the essential difference between the cortex and medulla of the adrenals." The rest of the text gives details obtained by various observers and the speculations founded thereon. Is the enormous development of the cortex in the human embryo connected with the highly developed brain of man? Does it yield a hormone which affects the organs of reproduction? It is even contended by some that the cortex of the gland is more essential to the life of the animal than the medulla, even though the chromaphil tissues yield the powerful active principle adrenin or adrenalin.

Over 100 pages are given to the thyroids and parathyroids, including their development, histology, and comparative anatomy. The author supports the view that they together form one apparatus, while "the *pars intermedia* of the pituitary body may have to be added as a third constituent of the apparatus." The treatment is in some respects not so full as is given by Biedl. The author has some remarks to offer on Murray's experiments on monkeys and the effect of glycerine extract of the thyroid. He concludes that the pathogeny of myxœdema must be more complex than simple thyroid insufficiency. The short account of the thymus is not so full as that of Biedl. Nearly 40 pages are given to a useful summary of the pituitary body, including the author's own contributions, the relationship to the reproductive organs, acromegaly, and the use of extracts in medicine, surgery, and gynæcology. A short chapter on the pineal body brings the work to a close. We do not find any reference to achondroplasia, mongolism, infantilism, or osteomalacia as such.

Professor Schäfer adds a short preface in which he says that the book should appeal to investigators, teachers, and students and those engaged in the practice of medicine. The book itself will appeal to the first two classes. It is far less explicit in regard to the needs of the third class or circle. To us Biedl's work seems more valuable here, as more expansive. The chief merit of the book is the account of the comparative anatomy and physiology of the organs on which Professor Vincent himself has been an active worker. The reader is struck not by how much has been definitely achieved—great though that be—but by the vastness of the knowledge which has yet to be acquired before we can state definitely not only the action of each of these organs in the economy, but, what seems to be of at least equal importance, the interactions of these organs amongst themselves. We thank the author for the codification of his own work and for the compilation of the work of those hundreds of observers who have contributed to our knowledge on this fascinating, though still far from well-elucidated, subject.

Blood-vessel Surgery and its Applications. By CHARLES CLAUDE GUTHRIE, M.D., Ph.D., Professor of Physiology and Pharmacology, University of Pittsburgh. Illustrated. London: Edward Arnold. New York: Longmans, Green, and Co. 1912. Pp. 360. Price 14*s.* net.

THIS is one of the International Medical Monographs, a series in which several valuable volumes have already appeared, and the present work is no unworthy companion to them in that it forms a comprehensive account of the work and its developments indicated by the title.

The repair of an incised wound in an artery is usually supposed to have been attempted first only a few years ago, yet it is recorded that as long ago as 1759 Hallowell repaired a wound in a brachial artery by running a pin through the margins of the wound and tying a thread about it. However, in 1889 Jassinowski proved that arteries could be sutured by fine needles and silk. The earliest attempt to unite permanently two blood-vessels was made by Eck in 1879, and great ingenuity has been shown in devising various methods of joining vessels. The next step was to attempt

the transplantation of viscera by the suture of the vessels, and a measure of success has been attained. Success in arterial surgery depends on a minute attention to the technique, so as to prevent the risk of thrombosis. Many methods of suture have been employed, and it cannot yet be said that any one method has been found strikingly superior to any other. In this volume all the chief methods have been described. The results are very encouraging; in one case of arterio-venous anastomosis of the carotid artery and the jugular vein in a dog, the animal made a prompt recovery, and when it was killed five years later a perfect union was found. An important point in the anastomosis of blood-vessels is an efficient method of controlling the circulation during the operation, and several simple instruments have been employed for this purpose.

One of the chief exponents of this very modern branch of surgery has been Alexis Carrel, to whom was recently awarded the Nobel prize for his work; in this volume due credit is given him for his great achievements.

On Alcoholism, its Clinical Aspects and Treatment. By FRANCIS HARE, M.D. Durh., Medical Superintendent of the Norwood Sanatorium. London: J. and A. Churchill. 1912. Pp. 269. Price 5s. net.

READERS acquainted with the reports of the Norwood Sanatorium for the treatment of inebriates will be prepared to find much material of value in the volume in which the medical superintendent of that institution, Dr. Francis Hare, has embodied the results of his experience. Nor will their expectations be disappointed. With the exception of the first chapter, which is merely a *résumé* of the rather shallow theorising of the report of the last Departmental Committee on the Inebriates Acts, and has no very obvious connexion with the rest of the work, the volume is sound in its matter, and gives an accurate and well-balanced presentation of the clinical facts of alcoholism.

The author has recognised the heterogeneous character of the cases which come under medical treatment on account of alcoholic intemperance, and his classification of these cases is good and convenient. He establishes a primary division into recurrent or intermittent, and chronic or continuous alcoholism, and then makes a further subdivision of each of these classes into two, the intermittent cases being distinguished as (1) true dipsomania, and (2) pseudo-dipsomania, while the cases of continuous alcoholism are divided into (1) chronic inebriate alcoholism, and (2) chronic non-inebriate alcoholism. This scheme avoids the fallacies and confusion which usually characterise clinical accounts of alcoholism. The distinction of true dipsomania is especially to be commended, and it may be hoped that the example will tend to discourage the common practice of applying this term indiscriminately to all cases of intermittent intemperance, instead of limiting it, as it should be limited, to those instances of periodic mental disorder, probably akin to manic-depressive insanity, in which there is an overpowering impulse to alcoholic excess. Dr. Hare, and in our opinion rightly, insists on the rarity of cases of this type.

With regard to delirium tremens and alcoholic epilepsy, the author sets out a case in support of the view that these conditions are really abstinence symptoms occurring in chronic alcoholics who have been suddenly deprived of their usual supply of liquor. There are many difficulties in the way of this theory—notably the fact that deprivation of alcohol induces the appearance of fits or delirium only in a relatively limited number of cases. The experience of the Norwood Sanatorium is not confirmed by observers with opportunities as good as those of Dr. Hare, and the point is one that requires further consideration. It is of obvious importance as bearing on the question of the best mode of cutting off alcohol in inebriate cases. Dr. Hare naturally lays much stress on the necessity of gradual discontinuance. The other general principles of treatment which he inculcates, such as the importance of remedying slight deviations from physical health, the need of meeting the special etiological forces operative in each individual case, and so forth, are obvious. He attaches considerable value to the administration of strychnine and atropine by the hypodermic method, but shows a reasonable appreciation of the part which suggestion may possibly play in the results of this treatment.

The work is a useful contribution to the medical literature of inebriety.

Spezielle Diagnose der Inneren Krankheiten; ein Handbuch für Aertze und Studierende. Nach Vorlesungen bearbeitet von Dr. WILHELM VON LEUBE. I. Band. Achte neu bearbeitete Auflage. Leipzig: F. C. W. Vogel. Pp. 574. Price, paper, 14 marks; bound, 15.50 marks.

Professor von Leube's handbook having now reached its eighth edition needs but brief notice. It is a work upon diagnosis which we can commend, as it deals with the subject in a thoroughly scientific and practical fashion. The present volume is devoted to a consideration of diseases of the heart and vessels, the respiratory, digestive, and urinary systems, the diseases of the suprarenals and of the peritoneum. In each case the actual consideration of the diseases of the organ or system dealt with is prefaced by a clear, concise, and practical review of the chief anatomical and physiological facts which it is necessary to bear in mind in order to appreciate the disturbance of function or of relation in disease. Unlike many treatises upon diagnosis, the one before us does not give a systematic description of the disease under consideration, but brings into relief those features which are of importance in diagnosis, indicates the distinguishing characteristics, and then proceeds to deal with the conditions likely to be confused with it. Not infrequently illustrative cases are briefly described. The style in which it is written is interesting, and the more important matters are emphasised by italics. This volume contains a full index, which materially adds to its usefulness.

Obstetrics: A Text-book for the Use of Students and Practitioners. By J. WHITRIDGE WILLIAMS, Professor of Obstetrics, Johns Hopkins University, Baltimore. Third enlarged and revised edition. With 16 plates and 668 illustrations in the text. London and New York: D. Appleton and Co. 1912. Pp. 977. Price 25s. net.

THE third edition of this book has been thoroughly revised, and there is hardly a chapter which has not been materially altered. In spite of this, the author has succeeded in keeping the enlargement of the book to some 26 pages, a fact upon which he is to be congratulated.

The section upon the development of the ovum has been largely added to, and a notice of the early ovum of Teacher and Bryce has been incorporated. The chapter dealing with the organic changes in the rest of the body in connexion with pregnancy has been in large part rewritten, and contains a most interesting account of the more recent researches on this subject. The author has somewhat modified the view he put forward in the last edition that a high ammonia co-efficient in the urine is pathognomonic of toxæmic vomiting, but he still believes that it indicates a profound perversion of metabolism which may be associated with grave danger to the patient. He is willing to concede the fact that acidosis may be the cause of the high ammonia co-efficient or that it may be in part due to starvation, but he still maintains that it may equally well be the manifestation of a profound toxæmia. In discussing the operation of pubiotomy

Professor Whitridge Williams mentions that he or his assistants have performed 38 successful pubiotomies upon 36 patients, two women having been operated upon twice. He is of opinion that the maternal mortality should not exceed 1 or 2 per cent., and looks forward to the day when this operation will practically supersede Cæsarean section in the so-called border-line cases—that is to say, in patients in whom the second stage has lasted several hours, and it is clear that the head cannot pass the superior strait. He holds that pubiotomy will still further narrow the field for the induction of premature labour, and will practically do away with the use of high forceps, version, or craniotomy in moderate degrees of contracted pelves when the mother is in good condition. The chapters upon Cæsarean section and the frequency of and treatment of contracted pelves are especially interesting, and furnish the reader with an excellent account of the subjects they treat of.

This edition fully deserves the success which has attended the two former editions, and we can cordially recommend the work, as presenting its subject in a judicial and clear manner and bearing the imprint of the author's large practical experience. Its value is much enhanced by a large number of excellent illustrations and plates and by the short but sufficient bibliography at the end of each chapter. The many merits of the book have already been realised by English students, and we can recommend it, not only to those of them who are reading for higher examinations, as a most excellent text-book, but also to their teachers as containing a very complete summary of all the most recent work on the science and art of obstetric medicine.

The Orientation of Buildings, or Planning for Sunlight. By WILLIAM ATKINSON, Fellow of the Boston Society of Architects. New York: John Wiley and Sons; London: Chapman and Hall, Limited. 1912. Pp. 139. Price $2.00, or 8*s.* 6*d.* net.

THIS book deals with a very important subject, and the author's suggested plans for buildings, by which they can be so constructed and placed as to gain the maximum advantages of sunlight, afford very interesting reading. The subject has received comparatively little practical attention, but there are signs of an awakening approaching. In crowded towns the foremost difficulty in regard to applying the principles is the consideration of space; we may hope, however, that as old buildings are pulled down and new avenues are constructed some regard will be given to the question of the provision of light with the same seriousness as is given to the provision of fresh air. Indeed, there are indications already of this desirable reform taking place in some of our populous districts.

The author starts with the admirable principle that to study properly the question of sunlight a sun plan of the buildings must be drawn, and their positions considered with respect to the shadows they cast upon each other and upon the ground. Although he commenced his study of orientation with hospitals especially in mind, he soon realised that the general principle of planning with reference to sunlight was of fundamental importance in the design of all buildings, and especially in the planning and laying out of cities, and so we find a very illuminating chapter dealing, amongst other things, with the angles of sunlight and the sunlight curves in streets, the law of ancient lights, the peril of the "sky-scraper," and so forth. The chapter on the construction and position of hospitals in relation to the sun is equally instructive. Sun-planning, of course, involves an acquaintance with certain astronomical data, and the reader is helped in this connexion by sections on the angles of sunlight at the different seasons, calculation of the angles of sunlight by stereographic projection and by spherical trigonometry. In a succeeding chapter there is a large number of illustrations given of shadow diagrams.

The book draws attention to a subject of vital importance, and the principles which it teaches call for a serious attempt at widespread application. Medical science can have no quarrel with the postulates of the author—which inspired his very interesting investigations—that it is desirable that all buildings in which human beings dwell or work should have all their exterior walls exposed to direct sunlight at some time during the day throughout the year, and that the surfaces of streets, alleys, areas, courtyards, and other spaces in and around buildings should also be exposed as much as possible to the action of direct sunlight. Further, in regard to windows he has assumed (correctly, we think) that as much direct sunlight as possible is desirable through them during that period of the year in which they are customarily closed. During a hot season, on the other hand, when windows may be open day and night and the sun-purified air is brought in by natural means, direct sunlight through windows becomes less of a necessity. We commend this book to all.

The Elements of Child-protection. By SIGMUND ENGEL, Doctor of Laws and of Politics, Official Guardian and Advocate in Budapest. Translated from the German by Dr. EDEN PAUL. London: George Allen and Co. 1912. Pp. 276. Price 15*s.* net.

THIS work, as the author tells us in the preface, is not intended to be in any sense a practical treatise on the subject of child protection; its aim is to formulate in general terms the outlines of the problem, and to discuss its relation to what the author regards as the two dominant intellectual influences of the age—namely, the Darwinian theory and the modern Socialist movement.

Without disputing the possible, or even the quite obvious, utility of a study on these special lines it may be permissible to wish that Dr. Engel had found means to embody in his work a larger amount of information on other aspects of the question which present more general interest, especially as it may be presumed, from the reference on the title page to his official position, that he has a claim to speak on these matters with the authority of experience. The omission is the more to be regretted as this question of child protection has apparently engaged an unusually large measure of attention in Hungary, where, by the State organisation of crèches, the regulation of foundling institutions, and in other directions, several interesting sociological experiments have been tried, the results of which should be very instructive. The incidental references which the author makes to these points excite curiosity, but do little to satisfy it.

The treatment of the theme of the volume as set out by the author—the relation of Darwinism and Socialism to the principles of child protection—appears to be rather cursory, as is, no doubt, inevitable from the very wide scope of the questions involved and their somewhat speculative character. Dr. Engel's standpoint is that of a very optimistic Socialist, and he is confident that most of the problems connected with child protection, such as illegitimacy, infanticide, juvenile criminality, and the like, will disappear with the abolition of capitalism. The arguments, however, which he advances in support of some of these views are not always convincing, and he is occasionally led to affirm as definitely accepted facts what are really personal opinions on keenly disputed points. For instance, in attacking the doctrine that the infantile death-rate is selective, he asserts that "everywhere we find that the infantile death-rate and the death-rate amongst children at ages 1 to 5 vary directly and not inversely." But the exact contrary to this statement is maintained by a good many statisticians of note, especially by Professor Karl Pearson and his pupils, so that some more precise reference to the evidence may be fairly demanded.

Apart from this tendency to rather dogmatic affirmation the book is interesting and stimulating, and shows, moreover, a degree of enthusiasm and conviction in the author which should go far to excuse his occasional exhibitions of intolerance. Dr. Eden Paul has given a very clear and readable translation of the work.

Thérapeutique Usuelle du Praticien: Traitement de la Tuberculose. By Professor ALBERT ROBIN. Paris: Vigot Frères. 1912. Pp. 640. Price 8 francs.

WE can only express a modified approval of the contents of this volume. We agree with Professor Robin as to the principles of the dietary to be adopted in the treatment of tuberculosis, and as to the value of certain drugs, which may stimulate the appetite and the digestion and assist in the general nutrition of the body. But not sufficient stress is laid on the principle of conferring, or attempting to increase, immunity against the inroads of the pathogenic organism. It is true that the author expresses approval of tuberculin in certain cases, with the advice that febrile and general reactions should be avoided as far as possible, and in that matter we are in complete agreement with him. He also criticises the use of Marmorek's serum, which he considers has a certain antitoxic action. He further discusses hydrotherapeutic measures, the effect of mineral waters, and treatment by climatic influences, but it will be strange to English readers to find "sanatorium treatment" practically disregarded and the modern theory of auto-inoculation practically omitted. Although this work may express the opinions of French physicians, in view of the recent investigations as to the production of immunity we are disappointed not to find more references to this question in Professor Robin's work.

Modern Road Construction. By FRANCIS WOOD, M.Inst.C.E., F.G.S., Borough Surveyor of Fulham. London: Charles Griffin and Co., Limited. 1912. Pp. 137. Price 4*s.* 6*d.* net.

IT appears that each form of vehicle exerts a different destructive force on the road, varying with the diameter of the wheel, the width and character of the tyre, the set of the axle, and whether it is horse-drawn or motor-driven. Extremes of heat and cold or long-continued wet weather also greatly influence the life of a road. It is considered that 20 per cent. of the wear is due to the weather, 60 per cent. to the horses' feet, and 20 per cent. to the wheels, these last two figures varying as the traffic may be light or heavy. There is a tendency for all traffic to push the road surface in the direction it is going, so that each half of a road creeps in an opposite direction. Motor traffic, in addition to this tendency, develops another—viz., a drag, or pull, which combined action necessitates an annual renewal of the tarred surface where tar is used.

Tar, or bituminous, paving seems to be superseding the old form of macadam, though the general principle of the latter is still retained in the case of the tar-paving. Thus, the granite or other coarse core is made hot and coated with tar before laying, hot tar being used with finer stone as a matrix. The best results of such paving do not yet seem to have been fully secured, the stability or success of such a road depending upon the presence of a due proportion of the volatile oils common in both tar and bitumen. Should these be too abundant, in hot weather the road becomes soft, and the loosened core grinds beneath the traffic forming ridges. If too little exists it hardens in cold weather to the consistency of pitch, and becomes brittle and without resilience; the pressure of the traffic is then spread over a smaller surface, the component parts breaking up readily. The essentials necessary for a good tar macadam road seem to be imperviousness of the surface to moisture, with sufficient ductility to retain resilience in hot or cold weather. The presence of the volatile oils is discussed by the author at some length in an especially interesting section.

With regard to the use of watercarts, it is stated that 5 per cent. of moisture is essential to retaining the matrix of the old macadam road in combination with the hard core, without which it disintegrates. An excess of moisture produces the same effect, the road becoming muddy in wet weather and dusty in dry.

Tables are given showing the cost of construction of the several kinds of roads in common use, their rate of wear, and cost of maintenance, with the tonnage of sweepings collected per mile, showing how it varies month by month. Other tables give an analysis of the traffic from day to day on well-known roads, and how propelled, with the approximate tonnage. A good map and index accompany a volume which we have found very interesting, and which appears at an opportune moment.

LIBRARY TABLE.

The Medical Directory, 1913. Sixty-ninth Annual Issue. London: J. and A. Churchill. Pp. 1936. Price 14*s.*—This now indispensable directory is so well known throughout the United Kingdom and the British colonies that any description of it would be superfluous. It is, indeed, hardly conceivable that there should be any practitioner who does not possess a copy, even though he may not renew it every year. From the numerical summary of the medical profession we gather that there are 41,587 British medical men in London, the provinces, Wales, Scotland, Ireland, abroad, and in the Services, constituting an increase of 534 over last year. It is significant, however, to note that of this increase 254 have gone abroad and 49 have entered the Services, so that the net increase in the British Isles is only 231, or deducting the 34 in Ireland, 197 for England, Scotland, and Wales. Under the list of principal appointments held by medical men giving details as to duties, responsibilities, remuneration, and so forth, no reference is made to the work of medical men under the National Insurance Act, but in a note on the Act itself (p. 34) it is stated that at the time of going to press the members of the medical profession had not accepted the terms offered them by the Government. Besides its value as a directory of medical men, the book is a valuable work of reference to the laws affecting medical men, the various British and continental health resorts, and the hospitals and medical societies of the kingdom.

Public Health Chemistry and Bacteriology. A Handbook for D.P.H. Students. By DAVID MCKAIL, M.D.Glasg., D.P.H. Camb. Bristol: John Wright and Sons, Limited. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1912. Pp. 409. Price 6*s.* 6*d.*—A commendable feature of this handbook is the careful selection that has been made of those laboratory methods applied to public health matters which have found approval because of their uniformity, accuracy, and convenience of operation. Text-books of this class so often follow closely their forerunners that it is most refreshing to find a work based on notes compiled not only from various standard works, but from articles "appearing in the medical journals from time to time." No originality is claimed for such material, while the author makes acknowledgment in the preface of the sources which have been drawn upon. The public health applications of laboratory practice, both chemical and bacteriological, are thus brought completely up to date. The chemistry section (Part I.) includes chapters on chemical analysis, water analysis, examination of air, soils, foods, beverages, disinfectants, antiseptics, and deodorants. Within these chapters we find Haldane's method of examining air for carbon monoxide described; an account of milk products and

infants' foods, which include recent additions to the list; a paragraph on the articles upon tea which appeared in our columns recently; and a capital *résumé* of the methods of examining disinfectant preparations, which introduces a prominent reference to the work of THE LANCET Commission on the subject. In the bacteriological section general principles are first clearly set out, followed by a chapter on bacterial activity. The succeeding chapter on immunity and anaphylaxis brings clearly before the reader the recent developments of this subject. Bacillus pestis is discussed in the chapter on non-sporing bacilli, and the reports on plague in China are ably summarised. Further proof of the progressive attitude of the author is seen in the chapter on special bacteriological examinations of water, air, soil, dust, sewage, shell-fish, and watercress. Although more or less in the form of condensed notes, the book will serve as a valuable and trustworthy guide in the service of State medicine. The work has been very thoroughly done, and with an eye to keeping the student up to the mark in the work of public health administration, where it is assisted by efficient laboratory applications.

The Care and Treatment of European Children in the Tropics. By G. MONTAGU HARSTON, M.D.Lond., Ophthalmic Surgeon to the Tung-Wa Hospital, Hong-Kong; with Introduction by Sir PATRICK MANSON, G.C.M.G. Illustrated with 17 plates. London: Baillière, Tindall, and Cox. 1912. Pp. 232. Price 7*s.* 6*d.* net.—This volume will receive a warm welcome from all practitioners engaged in medical work in the tropics. It should prove a valuable help to those who have to treat the children of European officials, merchants, and others in hot countries. It has to be remembered that special difficulties are associated with the treatment of tropical diseases in young children, who are unable often to describe their own sensations, and much therefore depends upon the knowledge and skill of the medical attendant. In the ordinary text-books on tropical medicine it is customary to describe these diseases as they occur in the adult; hence a work which, like Dr. Harston's, deals with the maladies in the child must prove of great service, particularly to the practitioner new to the tropics. The work is written from a practical point of view, and gives a good account of the etiology of certain well-selected diseases, along with numerous helpful suggestions as to treatment. Sir Patrick Manson remarks in the preface that some of these suggestions may give rise to criticism. The first part of the book is taken up with the consideration of climatic factors influencing European children in the tropics, the incidence of disease upon such children, certain considerations of hygiene, the general welfare of European children in warm countries, and the care of infants in the tropics. The succeeding chapters treat in detail of the various diseases met with in tropical lands. The last chapter is devoted to a short discussion of the subject of "repatriation," a topic which is constantly being brought to the notice of tropical practitioners by anxious European parents. Dr. Harston deals with this matter in a common-sense way, and briefly discusses the age at which it is desirable to send the child home to Europe. The problem as to whether it is possible to rear healthy white children in the tropics is also considered in what appears to us to be a sound and reasonable manner. We have confidence in recommending this book as giving sound advice upon matters in which many medical men and many of their patients are deeply interested.

A Handbook on Surgery, intended for Dental and Junior Medical Students. By A. S. UNDERWOOD, M.R.C.S. Eng., L.D.S., and A. BAYFORD G. UNDERWOOD, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond. London: Bale, Sons, and Danielsson. 1912. Pp. 244. Price 3*s.* 6*d.* net.—The dental student preparing for the general surgery part of his final examination often finds it difficult to know what are the requirements of the examination. This excellent little book will help to clear away much of this difficulty. The dental student should not discard a book on general surgery for this volume, but should read the two books side by side; if he will do this he will have no difficulty in obtaining all the knowledge that is required for his examination, and, what is still more important, for the intelligent practice of his profession. In future editions we suggest that the diseases of the oral cavity should be more fully treated.

(1) *First-Year Nursing: a Text-book for Pupils during their First Year of Hospital Work.* By MINNIE GOODNOW, Directress of Nurses of Milwaukee County Hospital. Illustrated. London and Philadelphia: W. B. Saunders Company. 1912. Pp. 328. Price 6*s.* 6*d.* net. (2) *Primary Studies for Nurses: a Text-book for First-Year Pupil Nurses.* By CHARLOTTE A. AIKENS, formerly Superintendent of Columbia Hospital, Pittsburg. Second edition, illustrated. London and Philadelphia: W. B. Saunders Company. 1912. Pp. 437. Price 8*s.* net.—(1) The author informs us that this book has been issued at the request of a considerable number of training school superintendents for a companion volume to Miss Charlotte Aikens's "Primary Studies for Nurses," now largely in use in training schools. District and private nursing as well as more advanced work have been purposely omitted, so that the work of the nurse in the first year of her training may be clearly defined. Each chapter is complete in itself, so that any rearrangement which the teacher may desire can easily be made. A chapter of particular interest is that devoted to nursing ethics. The young nurse, the writer states, will do well to bear in mind that the accepted principles of nursing ethics have not only been carefully thought out but tested over and over again in actual life, so that her attitude should be that of the child who obeys at first because it must, and later because it has seen the reasons. As to the restraints of institutional life, the nurse is reminded that her rights are those things only which can with justice to all be permitted to every nurse in the training school. Useful rules are laid down as to the proper methods of handling and lifting helpless patients, the preparation and application of surgical dressings, and the keeping of records. Some criticism may, doubtless, be made that chapters are included on the care of babies, obstetrics, and operating-room duties, but inasmuch as the smaller hospitals are compelled at times to call upon the younger nurses for assistance in these lines of work, we consider their inclusion not out of place. (2) The purpose of this book is to assist in securing graded instruction in training-schools for nurses, to promote uniformity in the teaching of the subjects which the nurse needs as the groundwork for her education, to assist in eliminating non-essential instruction of a medical character from the course, and to save time and labour both for pupils and teachers. It brings together in concise form closely connected courses of lessons in anatomy, physiology, hygiene, sanitation, bacteriology, materia medica, and therapeutics, as well as invalid cookery, which, with practical nursing technique, should constitute the first stage in a nursing education. This work is neither a text-book nor a book of reference, but is intended to fill the gap between the two. Experience in training nurses seems to have convinced the author that while pupil nurses are engaged from 8 to 12 hours each day in the practical care of the sick, two lectures or lessons in theory each week are the utmost to which they can do justice. Practical lessons or demonstrations of nursing methods, on the other hand, may be multiplied as time and circumstances permit. The book is planned to allow for one chapter or lesson to be

taken up each week of the training year, not including the ten lessons in practical cookery, which may be taught in classes or to nurses individually, as they serve their time in the diet kitchen of the hospital. In this way there is given a solid foundation on which probationer nurses can erect their practical knowledge of their calling.

Mouth Hygiene and Mouth Sepsis. By J. S. MARSHALL. London and Philadelphia: J. B. Lippincott Co. 1912. Pp. 262. Price 6*s.* net.—This little text-book has been written to meet "the needs of the dental profession, of students of dentistry and medicine, trained nurses, school teachers, sanitarians, and the general public for a work on the subject of mouth hygiene and mouth sepsis that would be comprehensive and not too technical." We feel the author has been too ambitious in trying to satisfy in the same book the requirements of such a wide set of readers. The book from the point of view of the practitioner is unsatisfactory, while from the point of view of the lay reader it is not sufficiently elementary.

Herbert Fry's Royal Guide to the London Charities. Edited by JOHN LANE. London: Chatto and Windus. 1913. Pp. 366. Price 1*s.* 6*d.*—Information concerning all the charities of London is arranged in alphabetical order in this book, together with brief notes on the work done, the names and addresses of the secretaries, and any other points worth mentioning. A group index and a preface which gives a summary of the charitable work of the year add to the utility of this well-known book of reference.

MISCELLANEOUS VOLUMES.

IN our issue of Dec. 16th, 1911, we reviewed a work by Ellen Key, entitled "Love and Marriage," which laid before the public the author's views on free divorce. In a recently published book, *Love and Ethics* (London: G. P. Putnam's Sons. 1912. Pp. 61. Price 1*s.* net), the same author returns to the theory "that society must be so adjusted as to make the happiness of the individual subserve the betterment of the species." This is an ideal of which we can all approve, but we cannot gather from Ellen Key's writings that it will come about if her theories are followed up. Neither in the book before us does she seem consistent; for instance, she tells us on p. 23 that "the dissolution of marriage should be made dependent upon the will of one of the married pair," while on p. 43 she says that the seven commandments of Schleiermacher would if followed renew humanity. The sense of the first of these, she says, is "Thou shalt have no lover except the one lover." Since, as a rule, dissolution of marriage is the first step towards one or both of the partners taking another mate, we do not see where "the one lover" comes in, unless "one" means "one at a time."—*Woman and Womanhood*, by C. W. SALEEBY, M.D. Edin., F.R.S.E., &c. (London: William Heinemann. 1912. Pp. 398. Price 10*s.* net), is a volume of social generalisations and details in the management of girlhood, based upon the author's eugenic faith, that woman is Nature's supreme organ for the future. It contains chapters on first principles, the determination of sex, Mendelism in relation of womanhood, the physical training of girls, the higher education of women, the choosing of a husband, the conditions of marriage and divorce, the rights of mothers, and so forth. Whilst the chapters devoted to subjects which are still to be regarded as in the fields of controversy, such as the principles of heredity, are rather superficial and dogmatic, those given over to the practical details of life contain much with which all persons of sound sense must agree. The book is obviously intended for those whose pleasure or interest it is to advance the claims of feminism, and may prove a guide to them when in their zeal they are inclined to go to extremes.

Those who hold to the opinion that the higher education of women must inevitably tend to the deterioration of the maternal instinct may be advised to read *The Baby: A Mother's Book by a Mother*, by a UNIVERSITY WOMAN (London and Edinburgh: T. C. and E. C. Jack. Pp. 94. Price 6*d.* net), one of a series of books on various subjects entitled "The People's Books." The writer tells us in the preface that she "is a University woman who has had three children with very short intervals between them." While neither father nor mother is exceptionally strong, the children have never once been confined to the house, much less to their beds, as a result of certain simple precautions, obtained in a manner that proves at the outset the inherent fitness for parenthood of the parents. "Two or three useful books were obtained, and their suggestions were adopted or rejected after the parents had discussed them." Yet in addition to the obvious care bestowed on these children, in addition to the performance of housekeeping, "which a servant and a nurse do not obviate," during the last four and a half years (the eldest child is four years and three months old) the mother "has written an historical biography, edited one of the classics of literature with an historical introduction, and reviewed about a hundred (mostly) scholarly historical works for one of the critical reviews." The medical aspects of the book, we are told, have been carefully revised by a doctor. There may be some question of the general fitness of some of the views enunciated in the chapter on mental development, though we should have no misgiving if they could always be carried out by so sane, tactful, and highly trained a mother as the writer shows herself to be. In less competent hands, however, we should fear lest they might be subversive of discipline and tend towards the establishment of a wilful and self-centred disposition, in spite of the author's clear comprehension of the necessity for avoiding these undesirable traits. Nevertheless, of this book it may be truthfully said that in it the ordinary everyday mother is offered the results of intelligent reading as to the care of children, tested by careful trial, enlarged by close observation, clarified by shrewd reasoning, and made helpful by unusual resourcefulness.—Another book of the same series is *Marriage and Motherhood: a Wife's Handbook*, by HUGH S. DAVIDSON, M.B. Edin., F.R.C.S. Edin. (London and Edinburgh: T. C. and E. C. Jack. Pp. 93. Price 6*d.* net). This book also is a useful handbook for the married woman, though there is more than one point in it open to controversy, concerning which, while it might be perfectly proper for the writer to express his opinion decidedly in a book written for the profession, it is hardly tactful to do so in a book intended directly for the patient. We may instance the question of the relative merits of early and delayed getting up after confinement. Surely the attending medical man must take the responsibility in such a case, and must therefore decide which course is to be followed, and it is not fair to him to prejudice his patient beforehand in favour of a particular course. Nor do we think it wise to prime a patient as to the advantage of scopolamine injections as mitigators of labour. While those medical men who see a danger in their use may be wrong and the author right, it is not for the patient to judge.

One of the most useful and practical books which have yet appeared upon the care and hygiene of a mother and her infant is *Mother and Baby*, by SELINA FOX, M.D., B.S. Durh. (London: J. and A. Churchill. 1912. Pp. 200. Price 1*s.* 6*d.* net). It is thoroughly practical and full of sound commonsense; the details throughout are quite excellent, and this without any tendency to fussiness. The wording is simple and clear, and should be easily understood even by mothers. It is very rare to find a book of this kind which does not trespass more or less

extensively upon the prerogatives of the physician. Dr. Fox, whilst giving an immense amount of valuable information, has succeeded in avoiding this pitfall, and the book forms an admirable and straightforward guide for mothers both before and after confinement; the remarks on pre-natal care are particularly sensible. The simplest methods are recommended throughout, as, for example, in constipation among other simple expedients olive oil and massage, and not the usual list of drugs are suggested. In the hands of any person concerned in its overwhelmingly important subjects the book would be of real use.——Yet another book containing much valuable information on the same subject is *A Manual of Nursery Hygiene*, by W. M. FELDMAN, M.B., B.S. Lond. (London: Baillière, Tindall, and Cox. 1912. Pp. 168. Price, paper, 1*s.* 6*d.* net; cloth, 2*s.* 6*d.*). The etiology, diagnosis, and treatment of diseases are perhaps rather in excess of what is usually called "hygiene," and somewhat beyond the understanding of many mothers, but the work is sound, and contains some very useful and realistic illustrations. On p. 43 we notice the inaccurate statement that scurvy never occurs in breast-fed infants, and in the section on constipation we observe that those unscientific expedients in the treatment of constipation, soap-sticks, are recommended.——It is commonly stated that ignorance of the signs and symptoms of illness, with consequent delay in obtaining medical advice, has often serious and even fatal results. That this belief is very general is shown by the number and variety of little books upon the subject of health and ailments which have appeared during the last few years. *Perfect Health for Women and Children*, by ELIZABETH SLOAN CHESSER, M.B., Ch.B. Glasg. (London: Methuen and Co. Pp. 276. Price 3*s.* 6*d.* net), contains a large quantity of good advice as to how to keep healthy, some of which has already appeared in "Every Woman's Encyclopædia," "Baby," and "Madame." In the chapter on the physical training of childhood certain simple exercises are included and the value of spontaneous play duly insisted on. There is a section on common ailments and how to deal with them, which follows an alphabetical arrangement, and a section on home nursing and first aid.

Nursing the sick is pre-eminently a woman's occupation, and there are several excellent handbooks on nursing, conveying the elementary professional knowledge required by a nurse, but *First Steps to Nursing, a Manual for Would-be Probationers*, by MABEL H. CAVE, Lady Superintendent and Matron of Westminster Hospital (London: S. W. Partridge and Co., Limited. Pp. 128. Price 1*s.* 2*d.*), is a book of a different character. It is intended, the author tells us in the introductory chapter, not to teach the art of nursing, but to give information to those who aspire to become a nurse. The advantages and prospects of nursing as a life work are explained, and the difficulties and disadvantages are also referred to, lest any should gain too roseate an impression of the nurse's life. The qualities essential to the making of a good nurse are described, and methods suggested by which they may be cultivated. The various grades in the nursing service, the scope of the duties, study, and examinations, are detailed, the routine of a nurse's life, her pay, leisure, recreation, books, and personal possessions are gone into, and the cultivation of hygienic habits is displayed. The way in which an intending nurse may fill up the time to advantage during the months' waiting that are likely to ensue between her application and appointment is judiciously set forth. Finally, details are given of the conditions, pay, &c., of the various Government nursing services, and of the civil branches of employment, such as district and fever nursing, midwifery, private and mental nursing, massage, dispensing and bookkeeping for medical men, and so forth. This latter part may prove of use also to those who have already entered upon the profession. If the intending candidate has realised the fact that nursing is a vocation as well as a livelihood, and not a mere business, and has determined to take it up in that spirit, then she should read this excellent book and so gain a view of her intended career in its proper proportions. She will probably regard it later as the most fruitful shilling's-worth she ever obtained. The book is written in a tone of friendly good fellowship that shows its writer to be a keenly human woman. We give it unqualified commendation.——It is easily conceivable that an elementary acquaintance with clinical examination of the excretions and fluids of the body—taking swabs, collecting specimens, and so forth—may be of service to the trained nurse, not only in small cottage hospitals and similar institutions, but even in assisting the medical practitioner under whom she may be working. Such knowledge is very succinctly afforded in *Elementary Clinical Pathology for Nurses*, by GEORGE HERSCHELL, M.D. Lond., and RICHARD WEISS, M.A., F.C.S. (London: J. and A. Churchill. 1913. Second edition. Pp. 30. Price 1*s.* net). A curious error appears repeatedly on p. 9, where a gravimeter is called a gravidimeter, which would mean, if anything, a measure of pregnancy.——The establishment of "Voluntary Aid Detachments" for the purpose of supplementing the medical service of the Territorial Force in carrying out its duties in respect of clearing and stationary hospitals, ambulance trains, entraining and rest stations, private hospitals, and convalescent homes, has given rise to the necessity for a manual specially adapted for the use of these detachments, both men's and women's. Surgeon-Colonel CANTLIE'S *British Red Cross Society Nursing Manual, No. 2* (London: Cassell and Co., Limited. 1912. Pp. 207. Price 1*s.* net.), is not a systematic work on the principles and practice of nursing, but rather a guide to the practical application of those principles in the special circumstances referred to. It is, however, very complete, especially in that, besides the ordinary duties that fall to the lot of the attendant on the sick, it deals with structural and administrative details, a knowledge of which is necessary to enable the attendants to make the best of premises that may be pressed into service as extemporary hospitals and sick rooms. It contains also all the necessary data in relation to diet, medicines and their administration, record-keeping, bathing, hydrotherapeutic applications, and the methods used in the treatment of simple ailments or as auxiliaries in the treatment of cases application of which is commonly committed to the nursing staff, infectious diseases, disinfection, surgical instruments, appliances, and dressings, post-operative care, bandaging, the movement of the wounded, and the laying-out of the dead. It is a valuable addition to the British Red Cross Society's series of manuals.

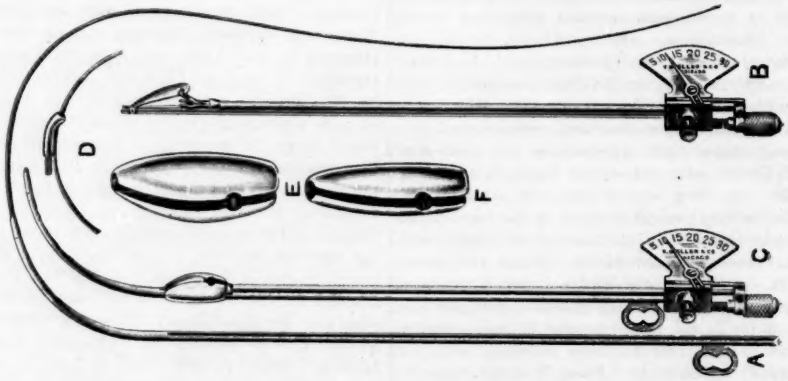
THE LATE DUKE OF ABERCORN.—The general career of the late Duke of Abercorn has been fully dealt with in our lay contemporaries; we mention here his particular claim upon the memory of medical readers. By his death the West London Hospital, Hammersmith, has lost an energetic president and chairman of the board of management. Since his election eight years ago he had taken the keenest interest in all that concerned the hospital's welfare, and had the gratification of knowing that largely by his efforts its financial position has steadily improved. He was most regular in presiding over the meetings of the board of management, and on Christmas Eve personally visited all the wards and distributed gifts to the patients, while on Dec. 29th he was at the hospital to receive Queen Amélie of Portugal who was paying it a visit.

New Inventions.

A NEW URETHROTOME.

THE desirability of equipping a urethrotome with some apparatus for accurately locating the stricture before cutting it has long been recognised, and a number of instruments are upon the market in which this feature has been incorporated. Kollmann's urethrotome, for example, would appear ideal where applicable, but it cannot well be used in the deep urethra or on any stricture having a calibre of less than 18 F. Teevan's urethrotome will certainly locate the anterior limit of strictured tissue accurately, and thus protect that portion of the urethra lying anterior to it, but as a fixed knife is used here we can scarcely expect multiple parallel shallow incisions, as it is possible to obtain with the Kollmann instrument. Teevan's instrument has, however, the advantage of being applicable to the smaller strictures. The new urethrotome is built upon the grooved staff of Maisonneuve, but having an adjustable knife and a graduated series of olives. Of these the surgeon will begin with the smallest, 20 F., and, having passed the grooved staff through the stricture into the bladder, he will adjust the olive over the lowered knife and advance the entire cutting apparatus along the staff, until he encounters resistance. This will tell him that the tip of his olive rests firmly against the face of the stricture and that he may proceed to elevate his knife. He will now advance the cutting apparatus further until resistance ceases, when he will again lower his knife. Now he will advance the cutting apparatus once more, testing the entire urethra with the olive as he proceeds, and bringing the knife into action only when cicatricial tissue is encountered. When finally the olive has entered the bladder he knows that beyond perhaps he has brought the calibre of the entire urethra up to that of the olive employed, and this he has done with entire conservatism, sparing absolutely the sound urethra both in front of and behind the stricture. Now he may repeat his manœuvres with the olive next in size, and this he may repeat again and again, making multiple parallel incisions until he has brought the calibre of the urethra up to such size as he may elect.

The illustration shows the details of construction



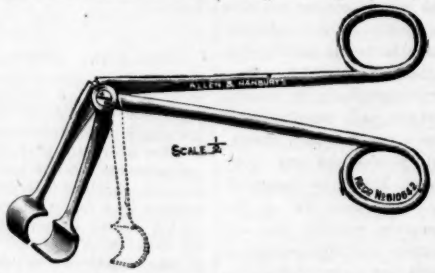
A, Grooved staff. B, Cutting apparatus. C, Cutting apparatus inserted into grooved staff and olive adjusted. D, Extra tip for introduction over a whalebone bougie. E and F, Olives.

I should like merely to emphasise the fact that the olive follows the knife closely through the stricture, thus putting the urethra upon the stretch while the incision is made and limiting the depth of the incision; also that the instrument is universal in its application, provided only that the stricture is not impermeable to a filiform guide. Accompanying the instrument is an extra detachable tip tunnelled for passage over a whalebone bougie. The instrument has been made for me by Messrs. V. Mueller and Co., Chicago.

St. Louis. H. MCCLURE YOUNG, A.B., M.D.

STERILISER FORCEPS FOR VACCINE SYRINGES.

IT is a matter of common experience that injection syringes are frequently dropped and broken, or the fingers are burned in the endeavour to keep hold of a syringe the temperature of which has been raised to about that of boiling-point of water or of oil. Equally futile is it in many cases to attempt to lift a syringe out of the boiling liquid in a steriliser by means of ordinary dressing forceps, since these are apt to lose their grip on the circular and slippery surface of the syringe or neck of needle. Where time is valuable, as, for instance, in the administration of tuberculin to many out-patients in succession, and one does not desire to wait until the syringe has cooled, the pair of forceps which I have devised, and which are shown in the illustration, will be found of practical utility. By means of these forceps the syringe with attached needle can be lifted out of the steriliser without risk, drained of fluid, and then held securely whilst it is filled with the required dose. By this time the syringe is cool enough to be grasped by the fingers, and the injection may then be given, the piston being lifted out by its top end in like manner.



These steriliser forceps have been made to my design by Messrs. Allen and Hanburys, Limited, 48, Wigmore-street, London, W., and are devised for use in departments for therapeutic inoculation. In addition to being serviceable for removing small vaccine syringes from the steriliser, they can also be employed for use with hypodermic, serum, and exploring syringes of any capacity up to 25 c.c., as well as more generally for operation instruments.

J. F. HALLS DALLY, M.D. Cantab., M.R.C.P. Lond.

Lower Seymour-street, W.

THE LANCET.

LONDON: SATURDAY, JANUARY 11, 1913.

The National Insurance Act.

WILL the administration of medical benefits under the National Insurance Act be forthcoming next week? It is already certain that in many districts adequate panels for the purposes of the Act have been formed, but it is by no means so certain that they have been formed willingly, or that they will provide a satisfactory medical service for insured persons. In some districts the panels are still ragged, and in some they are non-existent. In a brief summary of the recent events affecting the position of the medical profession under the Act, which will be found as usual at the end of the journal, the reasons for expressing no more definite view upon the immediate prospects will be abundantly apparent. There seem to be grounds for the assertion that, in some districts at least, dubious methods have been adopted in order to induce practitioners to join the panels; while in a great many areas in which panels have been formed at the eleventh hour the medical men have made it quite clear that they are accepting service not only provisionally, but under strong protest. It is an unanswerable indictment of those parts of the measure with which medical practitioners are concerned that genuine sympathy in their present position is due alike to those who are willing to work the Act, to those who are working it with deep reluctance, and to those who will have none of it. The practitioners who, through their interpretation of loyalty to the policy of the British Medical Association, have decided to abide by their pledges, given last year, have risked much in the course they have chosen; those who, while profoundly distrusting the conditions offered under the Act, have yielded at the last moment to economic pressure, see opening before them a vista of unpalatable work, with no certain close to its continuance; and those who, with a reasoned conviction and a good faith which cannot be gainsaid, decided to give their services, are resenting the attitude which has been adopted towards them by those holding different convictions. An Act, starting with the production of such sentiments in the profession without whose coöperation its provisions fail, confesses its need for early amendment.

The objections to the Act and Regulations may have been exaggerated in certain quarters, but that the present conditions of service are not satisfactory to a great many practititioners is obvious and easy to understand. A complete consensus of opinion either against the measure or in its favour was not to be expected. No Act of Parliament could turn upside down the whole of a learned profession, intimately associated alike with honourable traditions of great age and with scientific developments half-born, without deeply wronging some of its members, misunderstanding some of its institutions, and destroying some of its ideals. The mischief which was sure to follow upon hasty legislation, and which was here exaggerated by the action of the Government in not taking the statutory and official leaders of the profession into its confidence, has now been done, and it remains for us to remedy it where possible, and to work steadily towards regaining among the profession as a whole a more harmonious spirit. We all want to do our best for the sick, and we all know that the best cannot be done if the agents are underpaid, overworked, or harassed by unsympathetic—mainly because uncomprehending—employers. It must be acknowledged that, while the Act, with its perpetuation and extension of the contract system of practice, can only be regarded with the apprehensions which we have so often foreshadowed, we did not as a profession, during the time available, put forward a sound and workable alternative. The policy of refusing service under the Act, if an alternative had been forthcoming, would have obtained enough support to have compelled the Government to accord the necessary delay while proper inquiries were made. As it is, even with a nebulous scheme of medical service, and in the face of open and increasing disaffection, the forward tactics of the British Medical Association have imperilled the successful working of the Act, and have led to expedients on the part of the Government, which may be defensible on the very ground of expediency, but which have roused deep resentment among those who have against their will and judgment taken service.

No medical man can read the latest speech of the Chancellor of the Exchequer, which we summarise elsewhere, without regret and the gravest misgivings. It was meant to impress, and it has done so; but, whatever its practical result, the memory of its tone will long rankle, and the responsible Minister who made it will not in the future easily gain the confidence of that profession, upon whose loyal support must depend the successful working of any scheme for National Health Insurance. In spite of all that has been said by politicians, our profession as a whole has had only one desire throughout this protracted controversy—namely, to give the best possible medical service to the working classes of the country upon honourable terms. This object has repeatedly been obscured by catch-words and personalities. Heavy responsibility now lies upon the meeting of the Representative Body of the British Medical Association on Friday next. Since the last meeting, only three weeks ago, the long-anticipated struggle has begun, and the militant policy declared by the Representative Body has been repudiated for various reasons by large numbers of the profession. It now rests with the governing body of the Association to re-establish its authority and its influence, which have been so seriously weakened by the events of the past few weeks. Although resistance to the Act still goes on in various important centres—notably in the metropolis since the mass meeting at Queen's Hall on Tuesday—the fact remains that panels of some kind and under widely varying conditions

have been formed in most of the insurance areas, to the grave detriment of those practitioners who through loyalty to their pledges have stood by the decision of the last Representative Meeting. All these things must receive due consideration from the Representative Body next week, and no sense of injured dignity should prevent its members from facing the situation as it is. If they confirm their present attitude they must do so with a declaration of how they intend to meet the cost. If they reverse their view they can count upon hearty coöperation in any future effort for amendment of the measure.

Insanity and Divorce.

THE recommendation made in the report of the late Royal Commission to the effect that incurable insanity in one of the parties to a marriage should be admitted as a ground of divorce raises a question on which, as we remarked when making general reference to the Commissioners' proposals, there exists a substantial divergence of opinion amongst medical men; and this fact will not appear surprising to anyone who recognises the widely different aspects under which the problem may present itself to the physician, and the consequent likelihood that the accidental predominance of some one of its factors in individual experience may in many instances have lent a bias to judgment. At all events, the conflict of opinion to which it has given rise may not improbably be beneficial in its results if it leads, as it should lead, to the thorough and careful consideration of the manifold elements of this problem, in regard to which medical men occupy a position of peculiar responsibility as custodians of the interests of the insane and as advisers of the community on matters of public health.

In a letter which appeared in our columns on Dec. 21st, 1912, p. 1752, on this subject, the writer, who presents with force and candour the case for the proposed alteration of the law, lays stress very properly on the safeguards by which the Commissioners have qualified the scope of their recommendation; and it is doubtless quite true that these safeguards are probably sufficient to prevent serious risk of hardship through the application to any individual case of the principle which the Commissioners advocate. Recovery after five years' confinement, and when symptoms of definite enfeeblement of mind have developed, is admittedly so rare an event that the probability of its occurrence may be discounted in a practical view of the matter. To this argument, however, it might be objected with some show of reason that the risk which is feared is not with regard to the hopeless dement, but with regard to the curable patient, whose chances of recovery might be seriously impaired by the added anxiety lest his or her terrible affliction should entail the difficult position of a divorced person. No one who has watched the gradual revival of family affections and interests in convalescent cases of insanity will be likely to maintain that this risk is wholly negligible, though there would no doubt be a wide divergence in estimates of its importance. In any case, it is at least highly probable that this anxiety would not tend to be diminished when the operation of a reformed divorce law had familiarised people with the idea that insanity ought to be regarded as a ground for the annulment of the marriage contract. And, pursuing the same train of ideas, the conservative critic might ask whether the adoption of this new doctrine is not likely to exercise a somewhat undesirable influence on the attitude of public opinion towards the insane. It is not so very long since the inmates of asylums were treated by methods which implicitly, if not explicitly, ranked these invalids very much in the category of the criminal and the vicious. Only through the patient and unremitting struggles of the pioneers of mental medicine was it found possible to break down this prejudice and to establish insanity as a disease, with the same claims on human sympathy that attach to the ordinary afflictions of the body. Is this more enlightened view so securely grown into the general belief that there is no risk in giving sanction to a proposal which separates lunacy from all other forms of disease, and associates it with some of the worst varieties of vicious conduct? Hitherto the grounds of divorce have been such as carried with them an implication of moral turpitude, and the same quality attaches to all the new grounds which the Commissioners suggest should be recognised by the law, with this single exception of insanity. This is a fact (although it is qualified by a time limit being fixed) to which due weight should be given by everyone who recognises how subtle and obscure are the influences that determine the current of public opinion, and what unlooked-for results follow sometimes from the best meant reforms. At least we may be led by these considerations to admit the need of carefully examining proposals of this sort, so that there may be no hasty committal of medical responsibility to their support until the arguments for and against their adoption have been thoroughly threshed out.

The objections which we have referred to above as justifying an attitude of reserve towards the proposal to make chronic insanity a ground of divorce do not, however, apply to certain other recommendations of the Commissioners touching the relation of insanity to marriage. Thus medical opinion will certainly accept the view, adopted in both the Majority and the Minority Reports, that antecedent epilepsy or antecedent recurrent insanity, if concealed at the time of the contract, should render a marriage void. We have in this case, it is true, an added ethical factor in the element of fraud; but apart from this point, which lies outside our purview here, the biological warrant for the recommendation is thoroughly sound, inasmuch as the diseased conditions specified are such as, in a special degree, would appear in the light of our present knowledge to be liable to hereditary transmission. And we may add that from this point of view the proposal to recognise these morbid states as bars to marriage—for this is in some sort implied in the special reference to them—is also commendable for its indirect influence on opinion. It should tend, in fact, to increase the growing sense of responsibility to future generations which is one of the most promising signs of the social consciousness of our time, and it does this in a way which, so far from weakening the institution of the family, should rather strengthen the principles on which it rests. This is a consideration to which medical men, who perforce must in some measure be

sociologists, cannot remain indifferent; their recognition of its force must at all events impose upon them the duty of seeing that medical authority is not rashly given to proposals that tamper with the monogamic system which is the foundation of Western civilisation. For this reason, and because of the possible prejudice which it may entail to the interests of the insane, the recommendation that persistent mental disease should constitute a ground of divorce cannot be endorsed by the medical profession until it has been discussed in all its bearings and until the objections that lie against it have been conclusively met.

The New Order for Compulsory Notification of Tuberculosis.

THE Notification and Treatment of Tuberculosis Order of Dec. 19th, 1912, which has now been issued by the Local Government Board and will take effect on Feb. 1st, consolidates the previous Orders of 1908 and 1911, and amends them in certain particulars, of which the chief is the application of notification to all forms of tuberculosis instead of limiting it, as at present, to pulmonary tuberculosis. The consolidation of the previous Orders will be welcomed, as the procedure has now been made simpler and provides for all the principal contingencies on a uniform plan. Every medical practitioner will henceforth be required to make a "primary" notification of tuberculosis to the medical officer of health of the sanitary district in which the patient lives, in any case in which he diagnoses tuberculosis and has not any reasonable grounds for believing that the case has been previously notified. The fee of half a crown for each primary notification becomes payable to him by the local authority concerned at the end of the quarter without application being necessary. The medical officers of institutions, such as hospitals, asylums, and Poor-law institutions and sanatoriums, are in the same position as the private practitioner in regard to primary notifications. In the case of Poor-law establishments and sanatoriums, however, they are also required to make "secondary" notifications, on a different scale of fees, of all admissions and discharges of in-patients suffering from tuberculosis. The present system under which the medical officers of institutions merely notify to the local authority of the district in which the institution is situated, leaving it to the medical officer of health to sort the cases and distribute the notifications, is superseded; the institutions will in future send their notifications directly to the medical officer of health. The exemptions from notification of applicants for life insurance and certain other exceptional classes of the population remain, and an addition has been made which relieves certifying factory surgeons from the obligation of notifying. The duties imposed on the medical officer of health in connexion with notified cases include, as before, the preparation of a register and taking "such steps as are necessary and desirable for investigating the source of infection, for preventing the spread of infection, and for removing conditions favourable to infection." Nothing in the regulations is, however, to authorise any action which renders the person notified liable to penalty or subjects him to any restriction, prohibition, or disability affecting himself or his employment, occupation, or means of livelihood on the ground of his suffering from tuberculosis. Outside the county boroughs the medical officer of health is to send weekly to the county officer copies of all the notifications which he has received. His expenses in connexion with the regulations are to be defrayed by the local authority.

All forms of tuberculosis are now required to be notified, the only specified exception being tuberculosis the evidence of which is derived solely from tuberculin tests. The reasons which have led the Local Government Board to take this important step at the present time seem sufficiently obvious in view of recent events. Apart from what is termed ordinary domiciliary treatment, the sanatorium benefit of the National Insurance Act is not intended to be confined to insured persons or to those suffering only from pulmonary tuberculosis. It is to be available also in the case of any form of tuberculosis for the dependents of insured persons and those who are not insured at all. It is natural that the department which is responsible for organising a national system on these lines wishes to develop it by giving local health officers the means of obtaining independent information as to the individuals concerned, and not leaving them to wait for voluntary applications from those entitled to treatment. Much of the non-pulmonary tuberculosis, of course, occurs in children attending schools and is already brought to official notice in the ordinary course of school medical inspection. But the circular which accompanies the Order recalls the fact that more than half the deaths from non-pulmonary tuberculosis are of children under 5 years of age, and states that it is probable that a much higher percentage of the total number of persons suffering from non-pulmonary tuberculosis are children of this age. It is hoped therefore that notification of these cases will facilitate the investigation of sources of infection and assist in securing improvement in the conditions under which the children live.

The compulsory notification of tuberculosis in England and Wales may now be regarded as very completely provided for by the new regulations. It is based on the assumption that its adoption is in the interests of the tuberculous patients themselves, and to the advantage of preventive medicine and national statistics; and on the practical side there is already a large amount of experience which encourages a confident belief that universal notification will mark a new stage in the attack on tuberculosis which will have far-reaching and beneficial results. We refer elsewhere to the steps which are being taken by the Government Departments to encourage the provision of institutional treatment of tuberculosis by local authorities. The organisation to deal with notified cases is, of course, still far from being complete. The governing principles have as yet only been settled in a broad outline, in which many gaps remain to be filled. Time will be required and many different plans will have to be tried by medical officers of health in order to learn the ways in which the notifications that they receive can be used to the best advantage. Even on the statistical side it is obvious that numerous adjustments and corrections will be necessary as experience is gained.

The notification system as now extended will supply to all concerned the means of undertaking useful work in many new directions without waiting for the advent of complete local organisations which will satisfy all the requirements of the tuberculosis problem.

Annotations.

"Ne quid nimis."

RADIATIONS IN ECONOMICS.

WHEN we consider the many important processes in the arts and industries which depend upon the action of ferments the suggestion that these may be replaced by mere physical agencies is bound to claim attention. There are now some observers in the ever-expanding field of electrical study who are beginning to assign to the silent electric discharge, or to the ultra-violet rays thereby produced, a power to hydrolyse substances capable of undergoing that process. Starch at any rate after some hours' exposure to the silent discharge gradually resolves into sugar. It is well known, of course, that acids will do the same thing, and for a long time sugar has been prepared from starch by boiling it with acids. That was the first step which made the brewing and distilling industries independent if need be of the use of diastase as a converting agent. The mash tun can thus be replaced to some extent by the converter. The acid used as the hydrolytic agent must, of course, be removed, but, if it should prove that by the mere exposure of starch to the silent electric discharge it can be converted into sugar on a commercial scale, it is possible that both ferment and acid may at some future time be dispensed with. Further, it is recorded by our Paris correspondent this week that, according to M. D. Berthelot, the hydrolytic action of ultra-violet rays is not confined to carbohydrates, for albuminoids have been converted into soluble proteins by exposure to the rays, the action of pepsin and other enzymes being thus imitated. There can be little doubt that the study of the action of ultra-violet rays, or of the silent discharge, is leading to interesting developments which may possess great practical importance. The application of ultra-violet rays to the sterilisation of water-supplies furnishes an example, although it appears probable that there is still room for improvements in this application in order to make the process a completely efficient one. The extension of this principle to the preservation of both liquid and solid foods is also foreshadowed, although here considerable difficulty is encountered owing to the opaqueness of the materials to the radiations. Of exactly in what way the sterilisation is effected we do not appear to have received a satisfying explanation, some attributing it to the action of ozone and others to a direct killing property of the rays. A process of preserving perishable foods, independent of the use of chemicals, about the innocence of which there is doubt, would obviously be a valuable discovery to the community. The continued researches on these questions will be looked forward to with the greatest interest.

A HISTORICAL MEDICAL MUSEUM.

THE International Medical Congress will meet in London in the coming summer, and in this connexion the exhibition of rare and curious objects relating to medicine, chemistry, pharmacy, and the allied sciences, which is being organised by Mr. Henry S. Wellcome, bids fair to be very successful. The response to the appeal for loans has been encouraging, with the result that probably one of the most interesting collections of historical medical objects ever gathered together will be on exhibition during the meeting of the congress. Among other sections is one representing the medical deities of savage, barbaric, and other primitive peoples. Specimens of these have been forwarded from all parts of the globe, but there are still, we learn, many gaps to be filled, and those who possess such objects, and would be willing to lend them, should communicate with the secretary of the exhibition, 54A, Wigmore-street, London, W., England. Amulets, talismans, and charms connected with the art of healing will also form another prominent feature, and any loans of this description would be welcomed. In the section of surgery an endeavour will be made to trace the evolution and development of the chief instruments in use at the present day, and it is desired to accumulate specimens of instruments used in every part of the world by both savage and civilised peoples. In pharmacy and in botany special exhibits are projected, which will include models of ancient pharmacies, laboratories, and curious relics of the practice of alchemy in early times. Specimens of ancient and unusual materia medica from all parts of the world will also be exhibited. A complete illustrated syllabus will be forwarded to anyone interested on application.

"QUE DIABLE FAIT IL..... ?"

THE aversion of the medical profession from all forms of self-advertisement is well known and of long standing. Deeply rooted as it is, there are signs that twentieth century commercialism is weakening it in some respects, and that covert publicity is on the increase. Undoubtedly, it is impossible to draw any hard-and-fast line between what constitutes a correct and an unprofessional act in this respect. No one would brand as objectionable advertisements the somewhat swollen paragraphs which some members of the profession contribute to that very useful and necessary annual, the Medical Directory. The outlet thus provided for those who wish to bring their merits adequately before their colleagues serves sometimes a very practical purpose. Medical men can tell at a glance whether the information has been given for the use of professional brethren, or for the enlightenment of those members of the public who choose their medical attendants from reference books. Let it be granted, however, that some of our number find sweet the uses of advertisement—to these we would address a word of warning. Next August the Seventeenth International Congress of Medicine is to be held in London, and the leaders of medicine from many lands will attend its deliberations. It will appear to some that recognition as a person of mark in such company will be useful. A project has been set on foot to publish a kind of illustrated album of autobiography at the time of the Congress, wherein those who accept the proposals of the originators of the scheme will find their careers and their features preserved for the admiration of posterity. Possibly our readers may already know of this scheme, for—without any association with the International Medical Congress—it was floated many months ago. The name of the publication now projected is to be, we are informed, the *Medical World*, and its editor, a gentleman with a command of fluent and idiomatic English, together with a strong foreign accent, is already busy with the preliminary arrangements. To those on whom he calls in connexion with the *Medical World*, Mr. Kunodi, for this is his British name, expatiates upon the representative nature of the collection he hopes to form and upon the distinguished British consultants who have commented favourably upon the enterprise. If he were really confining himself to those leaders of English medicine whose names are household words in medical circles abroad, the project would be little open to criticism; but inasmuch as he is canvassing many practitioners who know that they are not, and can never by any possibility hope to be, leaders,

it is time that the profession made up its mind about the matter. Mr. Kunodi's business appears to be entirely legitimate, and one which no one can object to, or has a right to interfere with. But those members of the medical profession, whether they be leaders or followers, distinguished or undistinguished, consultants or "on the panel," who contemplate adding their names to his list, may well be asked to reflect a moment upon the "galley" in which they may find themselves, and the questions they may possibly be asked about it. If they care to take the risk, well and good; but they must accept the responsibility for adopting a course which will seem to others perilously close to that self praise which, in professional matters at all events, is still held to be no great recommendation.

BENCE-JONES PROTEINURIA: ITS ASSOCIATION WITH METASTATIC CARCINOMATA OF BONES.

Dr. Thomas R. Boggs and Dr. C. G. Guthrie report what must be an unusual experience even in a large institution such as the Johns Hopkins Hospital—the encountering of four cases of Bence-Jones proteinuria within 15 months. It is true that this experience leads them to suggest that this phenomenon is often overlooked, but in view of the care exercised in most large hospitals in the routine examination of urine, it seems probable that their cases exemplify once more the curious tendency which rare clinical conditions display of occurring in a close-packed series, once or twice only in the experience of the observer. Be this as it may, the writers have put their remarkable experience to the fullest use by making a thorough investigation (reported in the *American Journal of the Medical Sciences* for December) into the nature of this curious substance, and especially into certain of its biochemical relationships. They confirm the work already done as to the tests required to establish the presence of the Bence-Jones protein; it is precipitated at a temperature of 45–60° C., and redissolved at 100° C.; it is thrown down by cold nitric acid, but redissolved by boiling; and it is also precipitated by the addition of two volumes of saturated solution of ammonium sulphate. In the case longest under observation the average output of this protein was 5 to 10 grammes per diem; in this case also the protein underwent spontaneous precipitation. Polyuria was the rule, and there was also a very pronounced retention of chlorides. They have so far failed to secure the formation of specific precipitins by injecting the protein into the veins of animals, though this injection led to anuria within 24 hours, followed by excretion of the protein. After a second injection the protein was not excreted as such. Attempts to produce an intradermal or conjunctival reaction by the appropriate means were quite ineffective. In the first three of their cases the proteinuria was associated with symptoms which almost certainly indicated the presence of myelomatosis of the bones, though this was not definitely confirmed by necropsy. Their fourth case, which is of peculiar if not unique interest, is reported fully in the *Johns Hopkins Hospital Bulletin* for December. The patient, a woman of 37, had a cancerous mass of four months' growth in the right breast, together with symptoms which pointed to the presence of metastatic masses in the long bones. This surmise was confirmed by radiography, reproductions of which show the secondary growths in the skull, pelvis, long bones, and ribs with remarkable clearness. Further confirmation was afforded by post-mortem examination of a portion of the femur, which actually demonstrated the presence of centres of carcinomatous growth in the bone. There is but one other case on record in which a relation between multiple secondary carcinomatosis of bone and Bence-Jones proteinuria has been satisfactorily established; in this, Oerum's case, the primary growth was in the stomach. The protein seems to have been found in the urine in cases of extensive osseous disease other than carcinoma and myeloma; apparently genuine instances of its presence in connexion with chloroma, leukæmia, osteomalacia, and bony injury, are also on record. On the other hand, it is not present in every case of widespread disease of bone, not even in every case of myelomatosis. The inference, therefore, is that the source of the protein lies in some disturbance of a province of endogenous metabolism, over which the bone marrow presides, and not in the formation of some peculiar protein by the growth and development of myelomata. It should be added that in this very interesting case the blood changes that were noted were not of the special "pernicious" type.

THE ILLNESS AND DEATH OF NAPOLEON BONAPARTE.

THE passing from this life of the world's heroes, as well as their actions here, have always been of interest to their immediate survivors and to succeeding generations. In many instances the greater the man the more divided are his supporters and detractors, so that legend gathers around the death-bed or the disappearance. Thus Romulus was variously said to have been translated in a whirlwind and to have been torn in pieces by the Senate—"discerptum patrum manibus," as Livy laconically puts it. The manner of the death of Scipio Africanus is in doubt, for, according to Plutarch, some say that he died a natural death, some that he was poisoned, and some that he was strangled, and yet his dead body lay open to be seen of all. So, too, as regards Napoleon Bonaparte, there were not wanting those who reported that he was starved and made to live in an insanitary house and in a deadly climate, and that his death was one long agony, and that he was a prey to the cruelty of England. All these legends have been exploded, but in the most recent work on the subject Dr. Arnold Chaplin[1] has given us a valuable criticism of Napoleon's last illness and death. He argues that the various published reports of the medical men who at one time or another were in attendance at St. Helena—namely, O'Meara, Stockoe, Antommarchi, and Arnott—cannot be implicitly relied on, although they were published after the death of Napoleon and when the post-mortem examination had made everything clear. The real opinions of the medical men and the mistakes which they made are to be found in the Lowe Papers, deposited in the British Museum. These papers contain the daily reports of the physicians, and to them Dr. Chaplin has gone. The closing years of Napoleon's life make sad reading. Captivity is hard for anyone, how much the more for one who, like Napoleon, had lived such a tremendous life and had attained to a height of glory practically never reached before or since. The climate of St. Helena is not, however, unhealthy, and if Napoleon could have refrained from political intriguing he might, apart from the painful nature of his disease, have passed a restful time. But, as he himself said, "Je n'aime pas beaucoup les femmes, ni le jeu, enfin rien; je suis tout à fait un être politique." The policy of his staff was politically the same, and to their shame, be it said, it was the conduct of the Whig Opposition in England which instigated that policy. Thus La Cases wrote in his diary (Nov. 30th, 1815), "We are possessed of moral arms only, and in order to make the most advantageous use of these it was necessary to reduce into a system ..... *even our privations*, in order that we might thereby excite a lively interest in a large portion of

[1] The Illness and Death of Napoleon Bonaparte. By Arnold Chaplin, M.D. Cantab. London: Hirschfield Brothers, Limited. 1913. Pp. 112. Price 2*s.* 6*d.* net.

the population of Europe, and that the Opposition in England might not fail to attack the Ministry on the violence of their conduct towards us."[2] A consideration of these sordid political schemes is necessary for a right understanding of the circumstances of Napoleon's last illness. On the one side were his staff and political sympathisers in France and elsewhere whose aim was to make out that his illness arose entirely from the climate of St. Helena. On the other were the British Government and the Allies whose aim was to support the view that Napoleon was in good health and was enjoying the "salubrious climate" as far as was compatible with his position. Napoleon's own medical attendants, O'Méara and Antommarchi, diagnosed "liver comp'aint"—i.e., hepatitis—while Arnott, medical representative of the British Government at Longwood, *said* that the disease was merely hypochondriasis, and this only eight days before Napoleon became moribund. What he really thought will probably never be known, though it is believed, says Dr. Chaplin, that the MS. notes of his daily attendance are still in existence. The post-mortem examination clearly showed that an extensive malignant growth of the stomach was present, probably starting from a previously existing chronic ulcer. Dr. Chaplin has worked out the history of the case with great care, and his little book is certainly a valuable addition to the already vast Napoleonic literature; although his interpretations of the clinical and pathological data do not accord with those given by Professor Arthur Keith in an interesting communication to the Hunterian Society of London on Jan. 8th, which will be published in our next issue. Napoleon was so great a man that even the smallest details concerning him are of interest, and the tragedy of his life, the rise from obscurity to world-wide fame, the fall from the heights of glory to petty political intrigues and to a death full of pain, weariness, and sorrow is over-full of romance: even the spots on the sun of his career must always hold the attention.

VACCINE TREATMENT IN PNEUMONIA.

THE current number of the *Journal of Vaccine Therapy* is the first of the second volume, and appears under the editorship of Dr. W. D'Este Emery. It contains an interesting article upon Vaccine Treatment in Pneumonia, contributed by the former editor, in the course of which Dr. R. W. Allen, after some general observations upon the etiology and bacteriology of pneumonia, briefly reviews the pathology of the disease in its relation to vaccine therapy. He affirms his conviction that in the United Kingdom the percentage of cases in which pneumococci persist in the lung after merely causing an acute bronchial catarrh is very much greater than is commonly imagined and that their presence there is fraught with danger. In other words, he regards acute pneumonia as an exacerbation in a chronic infection of the bronchial or pulmonary tissues, whether due to the pneumococcus, bacillus influenzæ, streptococcus or bacillus of Friedländer. Dr. Allen urges the view that no case of respiratory catarrh due to any of these organisms is to be regarded as cured so long as there is any sputum in which the organism can be discovered or as long as any physical signs persist in the chest, and maintains that treatment by vaccines should be continued until complete disappearance of the infection, if possible. He admits that at present this end cannot always be attained, and in this event he advises that the patient's immunity should be maintained by repeated short courses of vaccine therapy. In regard to the use of vaccines in the course of an attack of acute pneumonia Dr. Allen suggests that in the earliest stages of the disease, when the micro-organism is in the blood stream rather than in the lung, the administration of the appropriate vaccine in adequate doses is of great value in a very considerable percentage of cases, whereas during the period of consolidation, when the micro-organisms are actively multiplying in the lung tissue itself, the vaccine is only indirectly of service in supplying extra immune bodies to be utilised when the process of resolution has begun. Vaccines also afford assistance if resolution be delayed. Dr. Allen further insists on the importance of the nature of the vaccine and the use of adequate doses. As might have been expected, an autogenous vaccine is preferable, but a stock polyvalent vaccine of proved immunising powers may be used to commence with, if the bacteriological cause of the pneumonia has been established. The general directions given in regard to dosage with pneumococcal vaccines are that a dose of not less than 25 millions of a polyvalent stock vaccine should be given immediately, and that if there is no definite response within 36 to 48 hours the dose should be repeated, or, preferably, a similar dose of an autogenous vaccine given. If there is still no response twice the dose should be given in from 36 to 48 hours, but if there is a response further reinoculation should be deferred for three days, when it should be carried out at intervals of three or four days until the patient is well. Dr. Allen then reviews the published results of a number of different observers, and concludes that the evidence is sufficient to warrant giving a fair trial to vaccine treatment in cases of pneumonia.

[2] J. H. Rose: Life of Napoleon I., vol. ii., p. 553.

INTRACAPSULAR EXTRACTION OF CATARACT.

DURING the last few years there has been a continued discussion on the operation for removal of cataract. The usual method of removal after the incision of the capsule has been largely given up in some parts of India, where the operators deal with more cataracts in a week than most English ophthalmic surgeons in a year, and has been replaced by the expression of the lens in its capsule. The chief exponent of this method, Colonel H. Smith, of the Indian Medical Service, has operated on a number of cases which seems almost fabulous to us in England. It has for the most part been recognised that the operation has many advantages, but the force necessary to expel the lens is sufficient in all but very expert hands to expel vitreous also, and even in Colonel Smith's first records the number of these accidents was excessive. It was further felt that details of the results were lacking, and therefore it was impossible to compare the results obtained by him and by the British ophthalmologists. This last objection has been to a large extent dispelled by the publication by Colonel Smith in the *Indian Medical Gazette* of the visual acuity in a series of cases. This series shows a very high average. Even taking into consideration the fact (which other observers have recorded) that in the clear atmosphere of India the visual acuity is probably 25 per cent. higher than in England, it is probably as good as that obtained by any other surgeon by any method. Colonel Smith may be justly proud of his results. The question of priority is of little importance, but it is only just to a great name to recall that Pagenstecher advised the removal of the lens in its capsule after an iridectomy by pressure, and that his scoop was intended to be a secondary instrument only for use after pressure had failed. This has been forgotten by many ophthalmic surgeons, but it appears quite clearly in Brudenell Carter's book on "Diseases of the Eye"; here (p. 406) Mr. Carter follows the teaching of Pagenstecher to some extent, though he does not approve of the scoop, for he says that it is always worth while, in cases of perfectly mature cataract in old people, in whom clinical experience had taught him to expect to find the capsule resistant and

the zonule weak, "to make the external wound rather longer than usual, and after the iridectomy to see whether the lens and capsule cannot both be extruded by gentle pressure. If this can be done the eye is left in the best possible state for the rapid and perfect union of the incision." Mr. Carter's pupils at least knew and used this method. But this is purely historical, and there can be no doubt that the operation of which Colonel Smith is so justly proud, and for which he makes so high claim, is his own device, suggested by the fact that certain patients expressed their own lenses at an early stage of the common operation, with little harm to themselves; and the details of this method are solely due to Colonel Smith. The reasons for the cautiousness in undertaking Colonel Smith's operation, which has been shown by the majority of ophthalmic surgeons, are probably to be sought in several directions. First, there is the innate conservatism of all men who know that they have an instrument which has answered their purpose well for many years. There can be little doubt that the large majority of cataract operations, as ordinarily performed, are successful. Then Colonel Smith's writings, and those of his followers, suggest that it is inadvisable for any one to try to follow him who cannot spare the time to go to the Punjab and practise under his direction. Major G. T. Birdwood, I.M.S., has told us that after doing the operation, from a written description, some 300 times, he gave it up, and found later that he was not really doing it in accordance with Colonel Smith's procedure. Lastly, the records of the followers have usually shown a large percentage of vitreous losses, and this accident British ophthalmic surgeons are accustomed—wrongly, as Colonel Smith holds—to regard as very dangerous. There can be little doubt that removal of the lens in the capsule is, as has been laid down in various text-books of ophthalmic surgery, a very desirable mode of dealing with cataract, but it is doubtful whether the forcible rupture of the zonule entailed by Colonel Smith's operation is the best way of bringing this about; and it has always seemed to be more surgical to expect that in the future ophthalmologists will remove the lens in its capsule, having first, by some method such as that described by Gradenigo, and more recently independently by Captain V. B. Nesfield, I.M.S.,[1] incised the suspensory ligament of the lens.

FUNCTIONS OF THE PINEAL BODY.

A REVIEW of our knowledge of the pineal body by Dr. Leonard J. Kidd is published in the *Medical Chronicle* for December, 1912. Comparative anatomy does not throw any very clear light on the nature of this organ, but in birds it has a definitely secretory structure, and the same appearances are seen in young mammals and in cercopithecus. It contains a large amount of neuroglial tissue and a number of special pineal cells with granular protoplasm. The granules may possibly represent an internal secretion. The gland, if it may be so called, seems to undergo some involution in adult life, the process apparently starting at about the seventh year, but even in the aged it appears to perform some function, and not to be merely a surviving remnant like the remains of the thymus. Clinical research has been devoted chiefly to tumours of the pineal body, of which about 65 cases are recorded. Of these approximately 10 per cent. have exhibited symptoms of nutritional change, the most typical being precocity of the genital apparatus and also to some extent of the mental powers, and marked adiposity. It has been suggested that the former is associated with defect of the pineal secretion, the latter with excess of it, while total absence may give rise to a peculiar form of cachexia. From the cases quoted in the review before us it would seem that the genital disturbance always occurred in boys, the only case recorded in a girl showing excessive adiposity. Experimental researches on the effects of extracts of the pineal body tend to show that it acts as a diuretic, dilating the renal vessels, and also as a galactagogue. Complete operative extirpation of the gland is not feasible, so that the effects of ablation cannot be accurately ascertained, but removal in fowls is said to lead to premature manifestations of sexual desire. There seems to be some antagonism between the pineal and the pituitary bodies, as removal of the testicles leads to atrophy of the pineal and to hypertrophy of the pitnitary. Dr. Kidd concludes that the pineal body possesses two separate functions, the first being a property of restraining the development of the sexual apparatus and ceasing at puberty, and the second an unknown influence exerted on the general metabolism of the body and continuing throughout life.

[1] Indian Medical Gazette, 1911.

DECEMBER AT HOME AND ABROAD.

NOVEMBER was very mild in this country, but December, in relation to its normal temperature, was much milder. For about half the period the thermometer recorded readings between 7° and 9° above the December average over a large portion of the kingdom, and the mean warmth for the month as a whole was 5° or 6° above. As generally occurs with mild weather in winter there were frequent rains and some very violent wind storms from the south and south-west, veering to west. The storms which raged about Christmas time on the coasts of these islands and far out on the Atlantic were of exceptional violence. In the metropolitan area there was little variation in the temperature, although the central districts were somewhat milder both during the day and night than the outlying suburbs. At Kew Observatory the shaded thermometer rose to 50° F. or above on 19 days, and the mean maximum for the month was a fraction over 50°, while the mean minimum temperature was 40°. The corresponding average figures for December are no higher than 44° and 35°. At Bath the mean maximum and the mean minimum were both 5° above the normal, the figures being 51° and 39°, and in the Midlands, as represented by Nottingham, the excess of warmth was almost identical. On the extreme south-west coast and the small islands the difference from the average was not so marked. At Scilly both the days and nights were 2° warmer than the normal, and at Jersey 3° warmer. The nights at Scilly, and also at Newquay, were milder than at Jersey. Most days brought more or less rain, but the aggregate fall was not, over the country generally, greatly in excess of the normal. At Kew the figure was 2·66 in., against an average of 2·09 in., and at Nottingham 3·4 in., an excess of 1·1 in. In the most south-western parts of England there were only six or seven days without a measurable amount of rain, and the total fall was generally heavy; at Newquay it was as much as 5·6 in. On a large number of days nothing was seen of the sun, and on many others it was visible for very brief intervals. At Kew there were 29 hours, against an average of 37 hours, and at Greenwich 27 hours, while at Hampstead there were no more than 22 hours, at Westminster 15½ hours, and in the City only 2¼ hours. This last figure does not, however, give an exact idea of the number of hours that the sun could be seen in the City, but the large amount of dust and mist in the atmosphere so enfeebles its rays that they are too dull to burn the recording card. All parts of the kingdom had less sunshine than usual in December, but most places in the south and south-west were brighter than London and the surrounding area. At Newquay the record was 32 hours, at Bath 36 hours, and at Scilly and Jersey 38 and 39 hours respectively. The midland and northern towns were duller

than most parts of London; at Nottingham there were only 19 hours of sunshine. Owing to the brisk flow of air from the mild south and south-west there was an almost complete absence of fog in the metropolis and other large cities, and there is no doubt that the air, being continually washed by the rains and never stationary, was much purer than during a quiet cold December. The general condition on the continent was also mild, although the divergence from the normal was not, as a rule, so striking as in this country. At Paris the mean maximum temperature was 48°, or 2° lower than at Kew, while the mean minimum was 35°, as much as 5° lower than at Kew, and 2° lower than at Nottingham. Berlin had the same mean minimum temperature as Paris, but its mean maximum was 3° lower. Some sharp touches of frost occurred in South Germany and the east of France, as well as in Switzerland, but were superseded by a thaw after a few days. Little rain and much sun formed the rule on the Riviera. At Nice there were only three days with rain, and very few with an overcast sky. The shade temperature, however, was very little higher than on the south-west coast of England, the mean day maximum being 54°. The nights compare unfavourably with the south and south-west coast of England. At Nice the mean minimum temperature was 40°, no higher than at Kew, and several degrees lower than at the resorts on the coasts of the south-west corner of England. Biarritz was nearly as fine as the Riviera and at the same time warmer. The mean maximum temperature was as high as 57° and the mean minimum 45°. On six days the thermometer touched or rose above 60° and on the 28th reached 70°. The coast of Algeria maintained a considerably higher temperature than the most southern part of Europe, except the south coast of Spain. Generally the thermometer rose to about 65° by the afternoon, and rarely fell much below 50° at night, while the weather was usually dry and bright. The island of Madeira was also usually fine. Rain fell on only seven days and the mean maximum temperature was 65·5°. The day warmth was seldom below 63° and as seldom above 67°, and at night the thermometer generally ranged somewhere between 45° and 50°, giving a mean minimum of 47·5°.

RECENT STUDIES OF PNEUMONIC PLAGUE.

THE disastrous epidemic of pneumonic plague which swept across Manchuria from west to east in the winter of 1910–11, slaying some 50,000 of the population,[1] has had no parallel in modern times. Its occurrence raised a number of new considerations especially as regards the manner in which the infection was conveyed with such rapidity and with such virulence along the lines of human intercourse in that country. It may be remembered that at the time the Chinese Government, alarmed at the ravages of the epidemic, invited the Great Powers to send expert representatives to Manchuria to investigate the disease and assist in devising means for preventing the further spread of the scourge. Among those who were sent in response to this call were two American medical experts from Manila, Dr. Richard P. Strong and Dr. Oscar Teague, who proceeded at once to Mukden taking with them sufficient laboratory apparatus for emergency work; their investigations were supplemented later by other researches made with the assistance of scientific collaborators at home upon their return to Manila. The results of these investigations have now been published in the last issued number of the *Philippine Journal of Tropical Medicine*. From this it appears that these experts, after establishing their emergency laboratory at Mukden, began an experimental inquiry into the method of transmission of the infection in pneumonic plague and into the manner in which the disease was spread during the epidemic. The experiments indicated that during normal and dyspnœic respiration of patients attacked by this form of plague the bacilli of the disease are not usually expelled by means of the expired air; but during coughing, even when sputum visible to the naked eye is not expelled, plague bacilli in large numbers may become disseminated in the air around the patient. The bacilli are contained in the droplets coughed up into the air, and the opinion was formed that in no other disease does the droplet infection approach in intensity to that of pneumonic plague. In Manchuria the malady was spread from person to person by this means, and whatever may have been the primary source of this extraordinary epidemic, its dissemination was entirely independent of rats (and fleas), tarabagans, or any other animal.[2] No definite evidence was found as to healthy human carriers with plague bacilli in their sputum. The influence of atmospheric temperature upon the spread of the malady was also studied experimentally. It is known that plague bacilli are readily killed by the process of drying, and, on the other hand, the longer the droplets remain suspended in the air the greater are the chances of their conveying infection. These fine droplets disappear quickly except when they are suspended in an atmosphere with a very small water deficit. Such an atmosphere is, under ordinary circumstances, of common occurrence in very cold climates, and, on the other hand, is rare in those climates that are warm. There is, therefore, a greater tendency for the pneumonic form of plague to spread in a cold climate than in a warm one. The Manchurian epidemic spread with the greatest rapidity when the atmospheric temperature was far below zero centigrade. It has also to be remembered that the rigorous climate led to shutting up of houses to keep out the cold air and to the suppression of the usual means of ventilation, along with the crowding of persons together for the sake of warmth, conditions altogether favourable for the spread of a droplet infection. Another point studied by Dr. Strong and Dr. Teague was the portal of entry of the infection and the method of development of the lesions in pneumonic and primary septicæmic plague. In this connexion a number of experiments on animals were carried out. From these it appears that the primary point of infection is to be found, not in the tonsils as a rule, but in some part of the bronchi, the specific microbes passing either along the bronchioles directly to the alveoli or through the walls of the bronchioles to the contiguous tissue of the lungs, giving rise to peribronchial and perivascular inflammation in the surrounding tissues, and afterwards to more diffuse inflammatory processes throughout the lung. The blood becomes quickly infected and a true bacteræmia results in every case. The fact that the œsophagus was found to be normal in all cases examined, and that the intestines showed only slight lesions, constitutes one more argument against the view that primary intestinal plague occurs in man,[3] for notwithstanding that in the Manchurian cases many plague bacilli must have been swallowed by the patients in their bronchial secretions and saliva, there was no sign of intestinal infection in any of them. Experiments were undertaken to determine the efficiency of various masks for protection against pneumonic plague. Masks, it may be said, were worn quite generally by the medical men and hospital attendants during the epidemic. In Southern Manchuria 122 members of the plague sanitary corps died from plague, including 42 doctors. It is presumed that these victims had worn masks, but there is reason to believe that when worn they were often improperly adjusted.

[1] THE LANCET, April 29th, 1911, p. 1153.

[2] THE LANCET, Dec. 16th, 1911, p. 1714.

[3] THE LANCET, April 27th, 1912, p. 1141.

While Dr. Strong and Dr. Teague believe that in similar epidemics masks ought to be worn by all attending upon the sick, nevertheless the masks are not to be regarded as affording absolute protection against the infection of pneumonic plague. In the Manchurian epidemic the wearing of masks lent a false security to the wearers and led some of them to take unnecessary risks with fatal consequences.

APPENDICITIS AS A LOCAL MANIFESTATION OF A GENERAL INFECTION.

THE current view that appendicitis is due to some local cause, of which the most important is constipation, is no doubt correct in the main, but the possibility that it may be a local manifestation of a general infection is not commonly considered. That it may exceptionally be a manifestation of typhoid fever has long been known. Recently in our columns Dr. F. J. Poynton and Dr. A. Paine reported a case in which appendicitis appeared to be due to streptococcal invasion through the blood from follicular tonsillitis.[1] At a meeting of the Académie de Médecine of Paris on Oct. 22nd M. F. Widal, in collaboration with M. P. Abrami, M. Et. Brissaud, and M. Weissenbach, made an important communication on the Hæmatogenous Origin of Certain Acute Appendicites, which is worthy of further notice than the brief note of our Paris correspondent.[2] They pointed out that while the view had been maintained that appendicitis might be the localisation of a blood infection, no conclusive demonstration of the fact had been given. This was furnished by the following case. A woman, aged 45 years, was admitted into the Cochin Hospital on May 17th, 1912, with the diagnosis of typhoid fever. She was in such a state of stupor that she could not answer questions. Previously in good health, she was suddenly attacked on May 3rd with fever, rigors, headache, and diarrhœa. On the following days she became worse; there were four or five fœtid stools daily, the temperature rose to 104° F., the headache increased, and delirium occurred. On admission she seemed to have a typical attack of typhoid fever. The tongue was dry, the lips were dusky, and the skin had a slightly icteric tint. On the abdomen, flanks, and the sides of the chest was an abundant eruption of rose spots. There were also tympanites and gurgling in the right iliac fossa, but no muscular rigidity. In the chest sonorous and sibilant rhonchi were heard. The urine was dark coloured and contained albumin. On the 19th the general condition suddenly became worse, the stupor increased, the temperature rose to 104·4°, there was constipation, the tympanites became intense, the abdomen presented generalised "muscular defence," the hepatic dulness disappeared, and there was a peritoneal facies. The pulse became small and uncountable, the extremities cold, greenish fluid was vomited, and the patient died comatose. At the necropsy 200 to 300 c.c. of turbid liquid were found in the pelvis. In the small intestine the lesions of typhoid fever could not be found; Peyer's patches were not swollen. Near the end of the vermiform appendix a patch of gangrene could be seen through the transparent peritoneum. In its centre was a fine opening from which exuded on pressure a drop of turbid fluid. On opening the appendix the typical lesions of gangrenous appendicitis were found. On the mucous membrane of the cæcum was a number of ecchymotic patches. In the appendicular pus and in the peritoneal fluid the paratyphoid bacillus B was found in almost pure culture. During life, on May 17th and 19th, this bacillus was found in the blood. The illness ran a course of two stages. For 15 days there was the typical picture of severe typhoid fever, then the symptoms of acute appendicitis suddenly supervened. The appendicitis was evidently the final result of the general infection. M. Widal suggested that microbial emboli, due to the septicæmia, entered the appendical and cæcal branches of the inferior mesenteric artery. The ecchymotic patches in the cæcum showed a nodular and perivascular infiltration traversed by numerous dilated capillaries obstructed by colonies of the paratyphoid bacillus. The view that appendicitis may be of hæmatogenous origin has been sustained by clinicians for some years. In 1896 Jalaguier insisted that measles was a cause of appendicitis, and in the following year Merklen and Faisans drew attention to influenza as a cause. After this several writers reported cases in which the portal of entry of the infection was furnished by a premonitory angina. Other cases were recorded in which the cause appeared to be pneumonia, scarlet fever, mumps, and even subcutaneous inflammation. Later pathological evidence was brought forward. In fatal cases of post-anginal appendicitis the streptococcus was found in the tonsil, submaxillary glands, and in the vessels and coats of the appendix. More recently appendicitis has been experimentally produced by infection of the blood, and the view has been brought forward that the inoculated microbes may be eliminated by the appendix. All that was wanting to complete the evidence was the cultivation of the causal organism from the blood, and this has been furnished by the case reported above. In cases of appendicitis which early show severe general symptoms a septicæmic origin should be suspected.

[1] THE LANCET, August 17th, 1912, p. 439.
[2] THE LANCET, Nov. 9th, 1912, p. 1328.

ON Jan. 22nd and 24th, at 5 P.M., the first two lectures under the Semon Lecture Trust will be delivered at University College, London, by Dr. Peter McBride. The subject will be "Sir Felix Semon, his Work, and its Influence on Laryngology."

THE HEALTH OF THE ARMY IN 1911.

I.

Improved Health of the Army.

THE improvement in the health of the British army both at home and abroad that has been so noticeable during recent years continues to progress, the statistics for 1911 that have just been issued[1] showing that the ratios for admission to hospital, average number of men constantly sick, and invalids discharged, are the lowest hitherto recorded, while the death ratio is practically the same as last year. The following figures are the ratios per 1000:—

	Admissions.	Constantly sick.	Deaths.	Invalids.
1889–98 ...	997·3 ...	59·85 ...	9·03 ...	15·36
1906–10 ...	534·0 ...	30·90 ...	4·59 ...	10·36
1910	443·1 ...	25·38 ...	3·44 ...	9·11
1911	421·1 ...	24·28 ...	3·47 ...	8·09

Not only is there great improvement since the decennium immediately preceding the South African war, but on comparison with the five-year period 1906–10 there is seen to be a notable diminution in all ratios; and in every item but one there is an improvement as compared with 1910. Even if the number of men suffering from slight disabilities, and under treatment in barracks, be added to those constantly sick in hospital, the total ratio only amounts to 31·83 per 1000.

The total force, amounting to 216,628 warrant and non-commissioned officers and men, may be divided into three groups from a medico-statistical point of view; about one half the number (109,399) are serving in the United Kingdom; the remainder are either stationed in India (72,371) or in the various colonies and dependencies of the Empire (34,858). As compared with 1910, there is a fractional increase in the admission and death-rates for

[1] Report on the Health of the Army for 1911. H.M. Stationery Office. 1912. Price 1s. 8d.

the United Kingdom, in the death-rate for India, and in the constantly sick-rate for the colonies; under all remaining headings, and on the whole, an improvement is manifest, except in the death-rate, which shows an increase of 0·03 for the whole force.

Recruiting.

The number of recruits brought for medical examination during 1911 was 48,178, some 2500 more than in the previous year, but far less than the average for the decennium, which was 65,000. Emigration, a general boom in trade, and the influence of labour exchanges in finding work for men who might otherwise enlist, are mentioned as causes contributing to this decrease as compared with former years, while the immediate slight increase over 1910 is considered to have been due to recent strikes and partly to lessened stringency as regards defective teeth. The number rejected on medical examination was 257 per 1000, a considerable reduction on previous years, due to lower standards of chest measurement and masticatory requirements being adopted. In 1910 the rejections for this latter cause were 57 per 1000 men examined, and in the decennium 1901–10 the ratio was 55 per 1000; in 1911 the rejections only amounted to 26 per 1000. One would like to think that this was due to improvement in the dental condition of young adults resulting from the greater attention that has been given to the teeth of school children in recent years, but apparently it is merely because a lower standard has now been adopted; the report, however, does not state what this standard actually is. The military authorities are probably justified in relaxing the stringency of their requirements, provided the physique and general condition of the recruit are satisfactory; but we should all recall that in the South African war there was great trouble and inefficiency, due to the bad condition of our soldiers' teeth; no doubt much more attention is now paid to this important matter than was formerly the case. Heart disease accounts for 41 rejections per 1000 recruits examined—a great increase over the decennial average of 25 per 1000. The exact cause is not clear, but that it is often due to environment and mode of living is shown by the fact that in such cases as are accepted great improvement takes place during their training at the depôt. Defective vision caused 21·07 per 1000 rejections, slightly more than in the previous year, but much less than the decennial average (30·55); this reduction has been due to change in the method of examination, which is now carried out by test types, instead of dots, as formerly.

As to the maintenance of a good standard of recruit, of the total number approved during the year, excluding those under 18 years of age, the average age was 19·6 years, the height was 66·2 inches, the minimum and maximum chest measurements (average) were 33·2 and 35·7 inches respectively, the range of expansion 2·6 inches, and the weight 127·9 lb.; these figures are practically equal to those of the preceding decennium and may be considered to be satisfactory.

The system of physical training recently introduced continues to work well, and no recruits have been discharged as medically unfit on account of any disability connected with their training exercises, either directly or indirectly.

Invaliding.

The ratio for invaliding, 8·09 per 1000, is the lowest on record; the decrease is general and cannot be attributed to decline in any particular diseases. There are five principal causes of invaliding in the army, and all of these show reductions. Circulatory diseases, which until recently had almost invariably been the chief cause, have now for four successive years lost this pre-eminence. In 1911 they came third, with a ratio of 1·15 per 1000. Before 1905 the ratio had always exceeded 2·5 per 1000. It may be supposed that the more rational methods of drill and equipment adopted during recent years have contributed to this improvement, and that the once familiar "soldier's heart" is now a rarity. Nervous diseases (1·50 per 1000) give the highest ratio, but one lower than has hitherto been recorded. Tuberculous diseases (1·18 per 1000) are slightly lower than the average. Digestive diseases (0·46) and syphilis (0·15) show considerable decrease from previous records.

Health of the Troops in the United Kingdom.

The improvement that has taken place in the health of the troops at home is shown at a glance in the following table. The figures are ratios per 1000.

	Admissions.	Constantly sick.	Deaths.	Invalids.
1889–98 ...	712·5 ...	41·14 ...	4·32 ...	16·98
1906–10 ...	407·6 ...	23·12 ...	2·78 ...	12·54
1910	346·0 ...	20·42 ...	2·42	11·07
1911	346·3	20·08 ...	2·47	9·78

There is but little variation as compared with the previous year, but the improvement on the figures for the preceding quinquennium, and still more on comparison with the period before the South African War, is most satisfactory.

In the London district the admissions were highest, 570 per 1000; also the constantly sick rate, 34 per 1000. In the Western Command these ratios were lowest—viz., 239 and 12·9. On comparing the different arms of the service, we find the Household Cavalry have the highest admission-rate (714 per 1000), and the Foot Guards the highest number constantly sick (35·2); the infantry of the line have only 358 per 1000 admissions, and 21·3 constantly sick. On comparison with the statistics for the preceding quinquennium, all branches of the service show an improvement in the number of admissions to hospital except the Household Cavalry, and all show a lessened inefficiency from sickness, again with the exception of the Household Cavalry and, to a very slight extent, of the Army Ordnance Corps. The excessive liability to illness on the part of the Household Cavalry, as shown by an admission-rate of 714 per 1000, compared with 465 per 1000 for the cavalry of the line (who have similar duties), and 499 per 1000 for the Foot Guards (who serve in the same stations), continues as pronounced as ever. The Foot Guards have, as in 1910, greatly improved their position compared with other branches of the service; their admissions have been 499, and their constantly sick 35·2, as compared with 657 and 44·8, the ratios for the quinquennium. The inferior position held by troops in the London district appears to be largely attributable to greater prevalence of venereal disease and of sore-throat; but the health of the district is improving, the admission ratio for the year under review (570 per 1000) being lower than in any recent year.

The most fatal diseases amongst soldiers at home were pneumonia (causing 39 deaths), tubercle of lung (19 deaths), and enteric fever (13 deaths); the diseases causing most sickness were gonorrhœa, syphilis, and soft chancre, which together caused a constantly sick ratio of 6·13 out of the total 20·08 per 1000. This is, however, an improvement on the average for 1906–10, which was 6·66 per 1000. The chief diseases causing invaliding out of the service were tubercle of the lung (1·07 per 1000), nervous diseases (1·13), and valvular heart disease (0·96). Diseases of the heart and circulatory system were not only less fatal than in the preceding quinquennium (0·29 compared with 0·36 per 1000), but also led to less invaliding (1·35 compared with 2·28 per 1000); this indicates that heart strain is now not common among soldiers, and is *pro tanto* evidence in favour of the system of physical training and drill at present in use.

Vaccination.—Of the total number of 96,302 recruits found on inspection to be fit for service 72·6 per 1000 had neither marks of vaccination nor of small-pox. The proportion of unprotected young male adults is rapidly increasing year by year. In the five years 1891–95 this proportion averaged 27·7 per 1000; in 1901–05 it averaged 39·3; while in 1909 it was 50·6, in 1910 56·8, and in the year under notice, as just stated, 72·6. This does not indicate any danger to the army, because on enlistment recruits are either vaccinated or revaccinated. It shows that in the general population there is an increasingly large proportion of unprotected persons whose health and lives would be endangered on the occurrence of an outbreak of small-pox.

Sanitation.—Instruction of regimental officers, non-commissioned officers, and men is carried out at the School of Army Sanitation at Aldershot and at Command headquarters. At the various camps of exercise throughout the country the sanitary administration has been satisfactory, and it is noted that all ranks show an increasing readiness and inclination to adhere to the sanitary rules laid down for their guidance. This also applies to the Special Reserve and Territorial Force, although these bodies are naturally not so advanced as the regular troops. Some Yeomanry units appear not to realise the importance of the matter; their

arrangements are sometimes "very luxurious," and it appears to be thought that if the rank and file had to study and practise the sanitary details necessary for camp life there would be a falling off in the attendance and training. Experimental work has continued to be carried on in regard to provision of a "safe" water for troops in the field; a preliminary purification, as well as clarification, can be obtained by means of alum added before filtration.

For *infectious disease* there was a reduction in the number of admissions, chiefly owing to lessened incidence of influenza and mumps; other diseases showed an increase. Enteric fever caused 70 admissions and 13 deaths, an increase of 27 cases and 9 deaths over 1910; 33 cases occurred in the Royal Warwickshire Regiment at Lichfield, infection having been probably contracted when under canvas at Rhayader from a polluted stream alongside the camp, the water of which was accessible, though not intended to be used as a supply. At Reading 5 cases occurred, infection being attributed to a night urinal used by an ambulatory case, and subsequently spread by the use of fouled cleaning utensils in the barrack room. Each of these outbreaks appears to have been strictly of a preventable nature. The total number of admissions for enteric fever amounted to 0·6 per 1000 strength, the same as the average ratio for the five years 1906-10. Six cases of food poisoning, with one death, occurred at Maryhill Barracks, Glasgow. Gaertner bacilli were isolated from the dejecta in two cases, but the origin of the outbreak was not definitely traced. Four cases of epidemic poliomyelitis occurred among the children of the Middlesex Regiment at Bordon Camp, near Aldershot, the infection seeming to have been introduced from Southsea.

Structural improvements.—New infantry barracks have been erected at Windsor and additional cadets' quarters at Sandhurst. There are under construction cavalry barracks at Redford, near Edinburgh, infantry barracks at Lichfield, Dover, and Plymouth, and artillery barracks at Fermoy. The old Wellington Barracks in London are being "improved," and the ancient artillery barracks at Woolwich "reconstructed." At Aldershot, Tidworth, and the Curragh electric lighting is being extended to all barracks, a much-needed improvement that should have important effects in rendering barrack rooms more habitable and attractive to their inmates. The hospitals at Chatham, Lichfield, York, and Portsmouth are being entirely reconstructed, and additions and improvements are being carried out elsewhere. Several drainage systems have been, or are being, reconstructed. The War Department now has in connexion with its barracks, forts, and camps satisfactory examples of every method of sewage disposal, "from broad irrigation to the most recent biological processes, as best adapted to the circumstances of individual cases." It has been decided to adopt iron piping as the most suitable for drains near buildings, in accordance with the best practice of the present day in civil engineering.

(To be concluded.)

KING EDWARD'S HOSPITAL FUND FOR LONDON.

MEETING OF THE GOVERNORS AND GENERAL COUNCIL.

A MEETING of the Governors and General Council of King Edward's Hospital Fund for London, for the purpose of awarding grants to the hospitals, convalescent homes, and consumption sanatoriums, was held on Dec. 18th, 1912, at York House, St. James's Palace, the Speaker of the House of Commons being in the chair.

Those present were the Viscount Iveagh, the Duke of Norfolk, Lord Rothschild, Lord Revelstoke, Lord Farquhar, Lord Stamfordham, the President of the Hospital Sunday and Hospital Saturday Funds (the Right Hon. the Lord Mayor), the Chairman of the County Council (Lord Cheylesmore), the President of the Royal College of Physicians (Sir Thomas Barlow, Bart.), the Right Hon. Sir Savile Crossley, Bart. (honorary secretary), the Right Hon. Sir Edgar Speyer, Bart., Sir W. S. Church, Bart., Sir Henry Burdett, Sir Horace Marshall, Sir William J. Collins, Sir Cooper Perry, Sir John Craggs, Mr. J. Danvers Power, Mr. Frederick M. Fry, Dr. Edwin Freshfield, Mr. John G. Griffiths (honorary secretary), Mr. William Latham, K.C., and Mr. Albert G. Sandeman.

Letters of regret were reported from, amongst others, His Highness the Duke of Teck, Lord Strathcona and Mount Royal, Sir Rickman J. Godlee, P.R.C.S., the Right Hon. Sir Ernest Cassel, and Professor Sir William Osler, Bart.

Lord ROTHSCHILD reported that the amount received for general purposes by the Fund to Dec. 16th, after payment of expenses, was £117,338 10s. 3d. For the first time for several years the total of the accounts was not of the satisfactory character which could be desired. There was a deficit on the year; that deficit would be met out of accumulated surpluses not distributed in previous years. He did not think it would be proper to analyse the reasons why the present year had not been of quite the satisfactory nature that past years had been. This year the legacies had unfortunately been smaller. It was only to be hoped that in years to come the prosperity of this great Fund would not be impaired by future legislation making calls upon the public. Messrs. Barings, who held the funds on deposit, had allowed the Fund a most generous rate of interest.

Sir HENRY BURDETT, in making his annual statement on behalf of the League of Mercy, said that a larger sum had been raised this year than last, and he hoped that the grant to be made to the King's Fund by the League of Mercy would be at least equal to that of 1911. The actual sum raised by the League this year was £20,000. They had given altogether £182,000, through the King's Fund and contributions to hospitals in the Home Counties in the past 12 years. If a few friends would send to him as treasurer of the League before the end of the year £1000 the League would be in the proud position of having contributed £200,000 in 12 years for the sick poor of this country.

Sir WILLIAM CHURCH submitted the report of the Distribution Committee, which stated that the sum of £151,000 was available for distribution amongst the London hospitals, of which 104 had applied for grants, as against 105 last year. St. George's Hospital, which withdrew its application last year as a result of the decision of the Fund in March, 1911, on the question of the amounts paid and allowed by the hospital to the medical school in respect of work done for the hospital, had applied again this year. Up to the time when the annual distribution for 1912 was approaching, no evidence had been addressed to the Fund by the hospital in support of its method of apportioning laboratory expenditure between hospital and school, and no information had been offered as to the grounds on which the hospital did not accept the previous decision of the Fund disapproving of that method. The committee learned from statements in the press and in the annual report of the hospital that evidence on this matter had been furnished in February to the Lord Mayor on behalf of the Hospital Sunday Fund, and on Oct. 14th, in view of their approaching meetings to consider grants to hospitals, they requested that this evidence might also be furnished to this Fund. It was not until Nov. 20th, however, that this evidence was received. It was at once referred to a subcommittee, but that subcommittee had not yet completed their report. The committee were, therefore, not in a position to make any recommendation upon the application of St. George's for a grant this year. The grants promised or set aside towards a general amalgamation of the five Throat, Nose, and Ear Hospitals remained at £20,500 pending an agreement on a satisfactory scheme or schemes. The sum of £5000 voted towards the removal of King's College Hospital to South London increased the total amount contributed by the Fund to this object to £48,000.

Mr. WILLIAM LATHAM submitted the report of the Convalescent Homes Committee. It stated that £6500 would be distributed amongst convalescent homes and consumption sanatoriums. The number of applications eligible for consideration amounted to 44 from convalescent homes and ten from consumption sanatoriums, as against 43 and seven respectively last year. The scheme for placing beds in country consumption sanatoriums at the disposal of patients in London hospitals continued to prove satisfactory. The amount of accommodation offered had increased considerably, but in view of the sum available for distribution and of the prevailing uncertainty as to the effect of the arrangements for sanatorium benefit under the National Insurance Act, the committee did not feel justified in adding materially this year to the number of beds taken by the Fund. For the present, therefore, they had secured 39 beds at five sanatoriums as against 37 beds at four sanatoriums last year.

The SPEAKER of the House of Commons, in moving the adoption of the reports and awards, read a letter addressed to the Governors by Lord Stamfordham, by direction of the King. His Majesty was sorry to see the falling off in the income of the Fund from subscriptions and donations this year, but was glad that, notwithstanding, it had been found possible to distribute the same amount as in 1911. "For the King would look upon any reduction in the total grants as a calamity, and is sure that this feeling would be shared by all those concerned, directly or indirectly, with the hospital work of London." His Majesty also highly appreciated the work of the members of the council and the standing committees, especially the honorary secretaries and Mr. Fry, and also the valuable services rendered by Lord Mersey, the Bishop of Stepney, and the late Lord Northcote in connexion with the report on the out-patient question. His Majesty was also gratified to hear of the excellent work of Mr. Maynard and the permanent staff. This was the first check in the steady rise in the amount distributed that had occurred since 1904.

Lord STAMFORDHAM having seconded, the adoption of the reports was carried unanimously.

Lord IVEAGH moved a vote of thanks to His Majesty for his gracious letter and for his continued interest in the Fund. This was seconded by the SPEAKER and carried with acclamation.

On the proposition of Sir WILLIAM COLLINS, seconded by Lord FARQUHAR, a report of the executive committee on the report of the out-patient committee was adopted. The exective committee's report recommended that the out-patient committee's report [1] should be carefully read by the hospitals concerned and invited observations and suggestions. Some correspondence between the Fund and St. George's Hospital was considered, and the proceedings terminated with a vote of thanks to the chairman.

LIST OF AWARDS.

(The absence of a grant does not necessarily imply dissatisfaction.)

Hospitals.

Alexandra Hospital for Children, £300; Beckenham Cottage Hospital, £25; Belgrave Hospital, £1250 (of which £500 to reduce building debt); Blackheath and Charlton Hospital, £150; Bolingbroke Hospital, £1300; British Lying-in Hospital, £500; Central London Ophthalmic Hospital, £1500 (to rebuilding in accordance with the scheme submitted to the Fund); Central London Throat and Ear Hospital (capital grants amounting to £20,500 have been set aside and promised for the purpose of a general amalgamation of the Throat, Nose, and Ear hospitals); Charing Cross Hospital, £4000 (of which £1000 to redemption of mortgage); Chelsea Hospital for Women, £1500 (of which £1000 to rebuilding in accordance with the scheme submitted to the Fund); Cheyne Hospital for Sick and Incurable Children, £100 (in consideration of the fact that some curable cases are admitted); City of London Hospital for Diseases of the Chest, Victoria Park, £3500; City of London Lying-in Hospital, £1000 (of which £500 to reduce building debt); Clapham Maternity Hospital, £200; Dreadnought Hospital, £4500 (of which £500 to reduce debt and £500 to renewal of floors); East End Mothers' Lying-in Home, £200; East London Hospital for Children, £2250 (of which £500 to reduce debt on recent improvements); Eltham and Mottingham Cottage Hospital, £100; Finchley Cottage Hospital, £25; Florence Nightingale Hospital for Gentlewomen, £200; French Hospital, £200; Friedenheim Hospital, £50; General Lying-in Hospital, £350; German Hospital, £200; Gordon Hospital for Fistula, &c., £25; Great Northern Central Hospital, £4000 (of which £1000 to reduce debt); Grosvenor Hospital for Women, £350; Guy's Hospital, £7500 (of which £2500 to building improvements in accordance with the scheme submitted to the Fund); Hampstead General Hospital, £3250 (of which £1650 on account of maintenance and rent, as agreed upon amalgamation with the North-West London Hospital, and £1500 to extinguish building debt); Home and Infirmary for Sick Children, £250; Home for Mothers and Babies, Woolwich, £100; Hospital and Home for Incurable Children, Hampstead, £50 (in consideration of the fact that some curable cases are admitted); Hospital for Consumption, Brompton (including sanatorium at Frimley), £6000 (of which £1500 to reduce debt); Hospital for Diseases of the Throat (capital grants amounting to £20,500 have been set aside and promised for the purpose of a general amalgamation of the Throat, Nose, and Ear Hospitals, see last year's report); Hospital for Epilepsy and Paralysis, £1500 (of which £1000 to extension in accordance with the scheme submitted to the Fund); Hospital for Sick Children, £2500; Hospital for Women, Soho-square, £2000 (of which £1000 to reduction of mortgage on No. 4, Frith-street); Hospital of St. John and St. Elizabeth, £350; Infants Hospital, £25; Italian Hospital, £400; Kensington and Fulham General Hospital, £25; Kensington Dispensary and Children's Hospital, £25; King Edward Memorial Hospital, Ealing, £600 (of which £275 to extinguish debt on the rebuilding of the hospital); King's College Hospital, £7000 (of which £5000 to removal fund); Leyton, Walthamstow, and Wanstead Children's and General Hospital, £300; London Fever Hospital, £50; London Homœopathic Hospital, £400; London Hospital, £12,500 (of which £2500 to reduce debt on recent improvements); London Lock Hospital, £4000 (of which £500 to the Harrow-road Hospital and £3500 to the rebuilding of the Dean-street Hospital, in accordance with the scheme submitted to the Fund); London Temperance Hospital, £1500; London Throat Hospital (capital grants amounting to £20,500 have been set aside and promised for the purpose of a general amalgamation of the Throat, Nose, and Ear Hospitals, see last year's report); Maternity Charity and District Nurses' Home, Plaistow, £150; Medical Mission Hospital, Balaam-street, Plaistow, £350; Memorial Hospital, Mildmay Park, £50; Metropolitan Hospital, £3500; Middlesex Hospital, £4500 (of which £500 to recent improvements in accordance with the scheme submitted to the Fund); Middlesex Hospital Cancer Charity, £250; Mildmay Mission Hospital, £400; Miller General Hospital for South-East London, £2750 (of which £2000 to extension in accordance with the scheme submitted to the Fund); Mount Vernon Hospital for Consumption (including Sanatorium at Northwood), £3000; National Dental Hospital, £250; National Hospital for Diseases of the Heart; National Hospital for the Paralysed and Epileptic £2500 (of which £500 to reduce debt); Nelson Hospital (late South Wimbledon, &c.), £1000 (of which £750 to rebuilding in accordance with the scheme submitted to the Fund); New Hospital for Women, £750; Norwood Cottage Hospital, £50; Paddington Green Children's Hospital, £800 (of which £200 to the completed reconstruction of out-patient department in accordance with the scheme submitted to the Fund); Passmore Edwards Acton Cottage Hospital, £75; Passmore Edwards East Ham Hospital, £50; Passmore Edwards Hospital for Willesden, £25; Passmore Edwards Cottage Hospital, Wood Green, £25; Poplar Hospital, £600 (of which £300 to improvements in accordance with the scheme submitted to the Fund); Prince of Wales's General Hospital, £4000 (of which £1500 to reduce debt); Queen Charlotte's Lying-in Hospital, £1000 (of which £250 to improvements in accordance with the scheme submitted to the Fund); Queen's Hospital for Children, £3250 (of which £1250 to reduce building debt); Royal Dental Hospital of London, £750 (of which £500 to reduce building debt); Royal Ear Hospital (capital grants amounting to £20,500 have been set aside and promised for the purpose of a general amalgamation of the Throat, Nose, and Ear Hospitals, see last year's report); Royal Eye Hospital, £750; Royal Free Hospital, £7000 (of which £5000 to new out-patient department in accordance with the scheme submitted to the Fund); Royal Hospital for Diseases of the Chest, City-road, £1500 (of which £250 to reduce debt); Royal Hospital, Richmond, £200; Royal London Ophthalmic Hospital, £2250; Royal National Orthopædic Hospital, £4000 (of which £2000 to reduce building debt); Royal Waterloo Hospital for Children and Women, £1500; Royal Westminster Ophthalmic Hospital, £100; St. George's Hospital (referred to in report); St. John's Hospital for Diseases of the Skin, £100; St. John's Hospital, Lewisham, £350; St. Luke's House, £50; St. Mark's Hospital, £400; St. Mary's Hospital, £5500 (of which £1000 to reconstruction of casualty department in accordance with the scheme submitted to the Fund); St. Mary's Hospital for Women and Children, Plaistow, £750; St. Monica's Home Hospital, £75; St. Peter's Hospital for Stone, £200; St. Saviour's Hospital, Osnaburgh-street, £150; Samaritan Free Hospital, £1500 (of which £500 to new Nurses' Home in accordance with the scheme submitted to the Fund); Santa Claus Home, £25; University College Hospital, £4500; Victoria Hospital for Children, £1000; West End Hospital for Diseases of the Nervous System, £350; Western Ophthalmic Hospital, £350 (to reduction of debt on rebuilding of out-patient department); West Ham and Eastern General Hospital, £2500; West London Hospital, £4575 (of which £1075 to reduce debt and £500 to new operating theatre in accordance with the scheme submitted to the Fund); Westminster Hospital, £3000; Wimbledon Cottage Hospital, £150 (of which £100 to rebuilding in accordance with the scheme submitted to the Fund). Total, £151,000.

Consumption Sanatoriums.

Children's Sanatorium, Holt, Norfolk, £50 (to equipment); Church Army Sanatorium (Children), Fleet, Hants; Daneswood Sanatorium (Jewish), Woburn Sands, £50; Devon and Cornwall Sanatorium, Didworthy, South Brent, £875 (in consideration of the reservation of ten beds during 1913 for the use of certain London hospitals); Eversfield Chest Hospital, St. Leonards, £50; Fairlight Sanatorium, Hastings, £25; Kelling Sanatorium, Holt, Norfolk, £700 (in consideration of the reservation of eight beds during 1913 for the use of certain London hospitals); Maitland Sanatorium, Peppard, Oxon., £125 (in consideration of the reservation of two children's beds during 1913 for the use of certain London hospitals); National Association for the Establishment and Maintenance of Sanatoria for Workers, Benenden, Kent, £625 (in consideration of the reservation of seven beds during 1913 for the use of certain London hospitals); Northampton Sanatorium, Creaton, Northants, £1050 (in consideration of the reservation of 12 beds during 1913 for the use of certain London hospitals). Total £3550.

Convalescent Homes.

Alexandra Hospital for Children, Painswick, £25; All Saints' Convalescent Home for Children, Highgate, £25; Baldwin Brown Home for Convalescent Poor, Herne Bay, £25; Beau Site Convalescent Home, Hastings, £25; Brentwood Convalescent Home for London Children, Brentwood, £25; Catherine Gladstone Free Convalescent Home for the Poor, Mitcham, £50; Charing Cross Hospital, Limpsfield, £125 (with a view to encouraging the admission without payment of patients direct from the hospital); Chelsea Hospital for Women, St. Leonards, £50 (with a view to encouraging the admission without payment of patients direct from the hospital); Children's Cottage Hospital, Cold Ash, Newbury, £25 (in consideration of convalescent cases); Children's Home Hospital, Barnet, £25 (in consideration of convalescent cases); Convalescent Police Seaside Home, Hove, £25; Deptford Medical Mission Convalescent Home, Bexhill, £25; East London Hospital for Children, Bognor, £225; Erskine House, Hampstead Heath, £50 (of which £25 to reduce debt); Friendly Societies Convalescent Homes, Dover and Herne Bay, £50; Great Northern Central Hospital, Clacton-on-Sea, £125; Home and Infirmary for Sick Children, Sydenham, Broadstairs, £50; Hospital for Sick Children, Great Ormond-street, Highgate, £100; Jewish (Children) Convalescent Home, Brighton, £25; King's College Hospital, Hemel Hempstead, £100; London Hospital Convalescent Home, Tankerton, £75; Mary Wardell Convalescent Home for Scarlet Fever, Stanmore, £25; Metropolitan Convalescent Institution (Children), Broadstairs, £50; Metropolitan Convalescent Institution, Walton, £150; Middlesex Hospital, Clacton, £400; Mildmay Mission Hospital, Hendon, £75; Mrs. Kitto's Free Convalescent Home, Reigate, £75; National Hospital for the Paralysed, Finchley, £100 (with a view to facilitating admission of patients without payment); Paddington Green Children's Hospital, Slough, £100; Poplar Hospital, Walton-on-Naze, £50; Queen Charlotte's Lying-in Hospital, Kilburn, £50; Queen's Hospital for Children, Bexhill, £100; St. Andrew's Convalescent Home, Folkestone, £50; St. Andrew's Convalescent Hospital, Clewer, £25; St. Mary's Home for

[1] This report was summarised in THE LANCET of Oct. 5th, 1912, p. 965.

Children, Broadstairs, £75 (in consideration of convalescent cases); St. Michael's Home for Men and Women, Westgate-on-Sea, £25; Sunshine Home of Recovery, Hurstpierpoint, £50 (of which £25 to reduce debt); Surgical Home for Boys, Banstead, £25; Victoria Home for Invalid Children, Margate, £25 (in consideration of convalescent cases); Victoria Hospital for Children, Chelsea, Broadstairs, £225; Winifred House Invalid Children's Convalescent Hospital Home, Tollington Park, £25. Total, £2950.

His Majesty the King, who is patron of King Edward's Hospital Fund for London, has sent his annual subscription of £1000 to the Fund.

ROYAL MEDICAL BENEVOLENT FUND.

AT the December meeting of the committee 26 cases were considered, and grants amounting to £217 made to 22 of the applicants. Appended is an abstract of the cases relieved:—

L.S.A., aged 68. Used to have an excellent practice in the S.W. of London, but lost it through ill-health and other misfortunes, and is now trying to re-establish himself in a working-class district. Relieved four times, £51. Voted £12.

Daughter, aged 54, of late M.R.C.S. Nursed her father for several years before his death and is now unfitted to maintain herself. No income. Relieved five times, £52. Voted £15.

Daughter, aged 63, of late M.R.C.S. Only income £12 a year. Voted £12.

Widow, aged 63, of L.S.A. Since husband's death has held a post as companion, &c., but is now in bad health and unfitted for regular employment. Voted £12

Widow, aged 62, of L.S.A. Since husband's death, more than twenty years ago, has supported herself in different ways, but is now no longer able to do so on account of bad health. No children. Voted £12.

Daughter, aged 71, of late M.R.C.S. Only income 15s. a week. Voted £5 and to be advised to consider the purchase of an annuity with such of her capital as she can control.

Widow, aged 41, of M.B., C.M. Aberd. Practically unprovided for at husband's death a few months ago, and being deaf is obliged to depend upon relations who can ill afford to help. Three children, one receiving an education through the kindness of a friend and the other two candidates for an institution. Voted £10.

Widow, aged 68, of L.R.C.P., L.R.C.S. Edin. Several years ago, with the assistance of two daughters, started a school, which has just supported them, but no longer pays owing to the opening of a secondary school. The daughters are endeavouring to obtain posts as governesses and meanwhile are in considerable difficulties. Voted £12.

Widow, aged 45, of M.D. Quite unprovided for at husband's death from phthisis a few months ago and is quite incapacitated by a spinal complaint. No income; two children, aged 6 and 4, who are temporarily sheltered at a Church Army Home. Voted £5 and case to be again considered after further inquiry.

Widow, aged 50, of late M.R.C.S. Husband's means exhausted by a long illness which preceded his death; no children. Is endeavouring to establish a boarding-house, but finds great difficulty in meeting expenses. Relieved three times, £30. Voted £10.

Widow, aged 53, of L.S.A. No income, and tries to support herself by needlework. Two children, one receiving a small salary as a governess, the other earning a few shillings a week by sewing. Relieved seven times, £70. Voted £12.

Widow, aged 66, of L.F.P.S. Glasg. Supplements a pension of £20 a year by addressing envelopes. Relieved 15 times, £146. Voted £5.

Widow, aged 67, of M.R.C.S. No income, and health too bad to allow regular occupation. Relieved three times, £36. Voted £12.

Widow, aged 57, of L.R.C.S. Edin. No income; endeavours to maintain herself by taking a lodger and doing needlework. Three children, one in ill-health and the others only just self-supporting. Relieved four times, £54. Voted £12.

Daughter, aged 66, of late M.D. Edin. Only income £10 a year, and unable to do anything to support herself because obliged to nurse two older and invalid sisters. Relieved seven times, £84. Voted £12.

Widow, aged 64, of L.R.C.P., L.R.C.S. Edin. Has just obtained a pension from a charitable fund, but had to spend so much on canvassing that she is in temporary difficulties. Earns a few shillings a week by taking lodgers. Relieved 13 times, £97. Voted £5.

Widow, aged 39, of M.R.C.S. Since husband's death a few years ago has endeavoured to support herself by dealing in cast-off clothing, but failed for want of capital. Two children, aged 6½ and 3½, the elder very delicate. Relieved once, £10. Voted £10.

Daughter, aged 62, of late M.D. Is in feeble health, and having no means is dependent on a sister whose only income is derived from two small pensions. Relieved three times, £36. Voted £12.

Daughter, aged 29, of late M.R.C.S. Is a typist, but owing to bad health is only able to earn a few shillings a week and is at present out of work. Relieved four times, £22. Voted £5 and case to be further considered.

Widow, aged 67, of L.R.C.P. Edin. Supplements an income of £20 a year by crochet, but finds great difficulty in selling her work. No children. Relieved 13 times £150. Voted £12.

Widow, aged 82, of M.R.C.S. Four children, aged 51 to 45, three being deaf and dumb. Has a small income but asks for a little help on account of their afflictions and her own infirmities. Relieved ten times, £66. Voted £5.

Widow, aged 39, of M.B., C.M. Aberd. Since husband's death six years ago has supported herself as a companion, but is now in difficulties owing to an illness that has lasted some months. Two children, both at an institution. Relieved once, £5. Voted £10.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 16, Wimpole-street, London, W.

LOCAL AUTHORITIES AND INSTITUTIONS FOR THE TREATMENT OF TUBERCULOSIS.

Questions of Finance.

A CIRCULAR recently issued by the Local Government Board to local authorities on "Schemes for Institutional Treatment of Tuberculosis" deals with questions of considerable practical importance. Under the heading of "Finance" the circular reproduces the letter addressed on July 31st last by the Chancellor of the Exchequer to Mr. Henry Hobhouse, representing the County Councils Association, which promised an annual maintenance grant in addition to the Government contribution towards capital expenditure on sanatoriums and similar institutions, and explains the departmental arrangements to give effect to this promise. Local authorities which provide institutional treatment for tuberculous cases will secure repayment of their expenses from the insurance funds in respect of insured persons only and to the extent that the available funds permit. The Local Government Board states in effect that after the sum repaid from insurance funds has been deducted all the remaining expenditure, "within reasonable limits," will be payable, half from local rates and half from the intended Government contribution. It is proposed, however, that the contributions from the National Insurance funds should include payments in respect of dependents of insured persons.

Suggestions regarding the Organisation of Schemes.

In regard to the schemes themselves, suggestions are made which county councils and town councils will no doubt consider carefully, as it is to be presumed that the Local Government Board will have to be satisfied before the annual grant above referred to is distributed. In the main these suggestions amplify those made in the previous circulars. The view that the whole system for the institutional treatment of tuberculosis at the public cost, including dispensary treatment, should form part of a definite local organisation controlled by the medical officer of health is further developed and emphasised. The name "tuberculosis officer" seems to have disappeared: the circular refers to a "chief dispensary officer" who should be "a medical practitioner specially trained in the diagnosis and treatment of tuberculosis," not engaged in private general practice, to be available for treating cases at the dispensary and as a consultant and also to act as medical adviser to the Insurance Committee for purposes of sanatorium benefit on terms to be agreed upon between the local authority and the committee. He may have assistants, who, it is recommended, should be either whole-time officers or men holding minor medical officer of health appointments or other posts not involving general practice. In county areas the dispensary officers should be appointed to act under the district medical officers of health for preventive work in the several sanitary districts which the dispensaries serve. The circular also contemplates that occasionally the medical officer of health of a county or county borough, if he has the necessary time and experience, may himself act as chief dispensary officer.

It must be noted that ordinary domiciliary treatment is not to be undertaken by the dispensary officers. It is proposed that the difficulties which would arise in carrying out this rule in rural areas should be met by the establishment of numerous branch dispensaries. Domiciliary treatment is to be paid for, in the case of insured persons, out of the funds of the Insurance Committee; in other cases by the patient or some one acting on his behalf. The circular lays stress on the importance of investigation by district medical officers of health to ascertain sources of infection, to search for contacts, and deal with unsatisfactory housing conditions. In regard to sanatoriums the advice of the Astor committee that the sanatorium intended for the treatment of early cases requiring a prolonged stay should usually contain not less than 100 beds is repeated. Beds for advanced cases, for educational treatment, and for purposes of observation should as far as practicable be arranged for in existing institutions.

PLAYGROUNDS IN PUBLIC ELEMENTARY SCHOOLS.

THERE will be little dispute in these days that education, to be satisfactory, must include besides instruction the training of character and the healthy development of the physical organism. In both of the last two items play forms a conspicuous factor. The prestige that has always attached to an English public school education has been dependent largely thereon. Properly regulated outdoor play develops not only the muscular system, but also the respiratory and circulatory systems, and at the same time, if properly organised, fosters the qualities of loyalty, subordination of self to the common aim, endurance, perseverance, and the coördination of the physical faculties. But play necessitates the provision of a *locus in quo*, so that the subject of playgrounds in connexion with the public elementary schools is one of real importance in respect of education.

Report of the Departmental Committee on Playgrounds in Schools.

A Departmental Committee was recently appointed by the Board of Education to inquire into certain questions in connexion with the playgrounds of public elementary schools. The committee held 39 meetings and examined 71 witnesses, in addition to considering expressions of opinion from 59 out of 318 local education authorities. Their report, after a brief reference to the history of playgrounds, cites the French and Prussian regulations, whose requirements as to playground space correspond very closely (3 square metres) with the existing British requirements of 30 square feet per head of accommodation. It discusses the purposes to be served by playgrounds under the following seven heads—viz., the provision of adequate open space: (1) around buildings to secure (*a*) light and ventilation, (*b*) quiet, (*c*) adequate sanitary arrangements; (2) for interval recreation; (3) for physical exercises; (4) for organised games; (5) for open-air classes; (6) for assembly and marshalling of children and for play for early comers and late stayers; and (7) for recreation out of school time. Each of these matters is considered carefully and judicially from all points.

The questions especially before the committee were, as regards new schools, whether any modification of the existing regulation of the Building Committee of the Board of Education—which demands 30 square feet per head of accommodation—can be allowed consistently with educational and hygienic requirements; and, as regards existing schools, the more precise definition of what will be required in the way of accommodation and the regulation of the practice of the Board of Education in dealing with schools whose present playground accommodation is judged insufficient.

Conclusions concerning New Schools.

On these points the committee concluded that, as regards new schools, the shape of the playgrounds should be more carefully scrutinised, and that passages and forecourts should not be counted as forming part of the minimum space required. Passages and corners they consider particularly objectionable, as increasing the risk of accidents and rendering supervision difficult. The best shape they consider to be an oblong with not very unequal sides. Except in very small schools playgrounds should be separate for boys and girls. Those for girls and infants need not be separated, but where girls and infants use the same playground the area must be sufficient for the total number of children, calculated in accordance with subsequent regulations. They conclude also that the playground must not be counted twice, but must provide the requisite space for all the children to use it at the same time.

The space required depends on whether other provision than the playground is made for organised games, as by arrangement with park committees, purchase of playing field, and so on. If it is so made, then each undivided playground for 200 children and upwards should provide for 20 square feet for each older child and 16 square feet for each infant, but for fewer than 200 children the playground should possess an area of 2000 square feet, together with 10 square feet for each older child and 6 square feet for each infant. Where no other provision is made for games the undivided playground for 200 children and upwards should provide 30 square feet for each older child and 16 square feet for each infant, while in the case of fewer than 200 children 2000 square feet are required, together with 20 square feet for each older child and 6 square feet for each infant. Where the site is expensive, regard being had to the price of land and the resources of the authority, the Board may, however, accept a playground, even when there is no other provision for games, below the last-named measurements, but in no case must it be below the requirements for cases where there is other provision for games.

Conclusions in regard to Existing Schools.

With regard to existing schools, the problem is obviously a difficult one, for it is recognised that the application of a rule requiring in existing schools an immediate satisfaction of the requirements made in the case of new schools is wholly impracticable. There are still many schools that date from days before the constitution of the Committee of Council on Education, which have been structurally altered completely to adapt them to the present requirements for education. Of recent years, however, a comprehensive scheme of structural alterations to a building has not been accepted as giving an expectation of permanent recognition, unless the playground provided 20 square feet for each school place; and that with an allowance of 15 square feet it has been stated that unless an enlargement were made the recognition of the school would be subject to reconsideration. The committee, recognising the force of public sentiment in the matter, estimate, however, that even well-informed public opinion would not at present be willing to support a requirement involving the expense of bringing all existing playgrounds up to the level of even 15 square fee for each child, and that it is not possible to suggest a date less than 10 or 12 years hence when such measures could be taken with any hope of general acceptance. In regard, therefore, to existing schools, they conclude that every school should have space for each class to take its lessons in physical exercises in the playground or an equivalent space (e.g., an open space within a walk of five minutes from the school, and having a proper surface and reasonable privacy; or in some cases even a hall that is thoroughly ventilated and not open to other objections). After 1920 a playground allowing less than 10 square feet, and after 1925 less than 15 square feet, per child should be classed as "insufficient"; while enlargement of buildings should not, except in unusual circumstances, be allowed, if it would result in a reduction of the playground below the limits specified in the case of new schools. The reduction of playgrounds below these limits by the erection of buildings for special subjects should not be allowed. The committee, having also considered the subject of roof playgrounds, and deciding that if properly constructed there is no special danger attaching to them and that they need not disturb the work of those below, conclude that a roof playground should be acceptable, and if it covers virtually the whole of the building should be regarded as satisfying the requirements of children, other than infants, occupying one floor.

The reasoning throughout the report, upon which the foregoing conclusions are based, strikes us as well thought out and cogent, and the report should be read on general grounds by all interested in educational problems.

VITAL STATISTICS

HEALTH OF ENGLISH TOWNS.

THE recently extended city of Carlisle will in future be included among the large towns in the Registrar-General's weekly return, which will relate to 96 towns all of which had populations exceeding 50,000 persons at the date of the last Census. In these 96 towns, with an aggregate population estimated to be 17,852,764 persons at the middle of this year, 9774 births and 5387 deaths were registered during the week ended Saturday, Jan. 4th. The annual rate of mortality, which in the 95 towns had steadily declined from 16·4 to 15·1 per 1000 in the four preceding weeks, was equal to 15·7 per 1000 in the 96 towns in the week under notice. During the 13 weeks of last quarter the mean death-rate in the 95 towns averaged 14·5, or

0·5 per 1000 below the average rate recorded in London during the same period. The death-rates in the several towns last week ranged from 5·7 in Eastbourne, 5·9 in Southport, 6·1 in Enfield, 8·7 in Hastings, and 8·8 in Leyton and in Reading, to 22·0 in St. Helens, 23·6 in Newcastle-on-Tyne, 24·2 in Dudley, 25·9 in Stockton-on-Tees, and 26·0 in Bootle.

The 5387 deaths from all causes in the 96 towns last week included 520 which were referred to the principal epidemic diseases, against 542 and 546 in the two preceding weeks in the 95 towns. Of these 520 deaths, which were equal to an annual death-rate of 1·5 per 1000, 300 resulted from measles, 78 from infantile diarrhœal diseases, 57 from whooping-cough, 42 from diphtheria, 30 from scarlet fever, and 13 from enteric fever, but not one from small-pox. The deaths attributed to measles, which had been 366, 321, and 336 in the three preceding weeks, declined to 300 last week, and caused the highest annual death-rates of 4·0 in Swindon, 4·1 in West Hartlepool, 4·2 in South Shields, 4·4 in Preston, 4·6 in Northampton and in Wigan, 5·2 in Bath, 6·4 in Barrow-in-Furness, and 6·8 in St. Helens. The deaths of infants under 2 years of age referred to diarrhœa and enteritis, which had been 68, 79, and 65 in the three preceding weeks, rose to 78 last week, and included 29 in London, 7 in Birmingham, 4 in Manchester, 3 in Stoke-on-Trent, 3 in Liverpool, and 3 in Oldham. The fatal cases of whooping-cough, which had been 49, 64, and 59 in the three preceding weeks, were 57 last week; of this number 17 occurred in London, 6 in Liverpool, 5 in Wolverhampton, 4 in Willesden, and 3 each in Cambridge, in Stoke-on-Trent, and in Bradford. The deaths attributed to diphtheria, which had risen from 39 to 52 in the three preceding weeks, declined to 42 last week, and included 11 in London and 3 each in Bristol, in Sheffield, and in Rhondda. The deaths referred to scarlet fever, which had been 23, 27, and 21 in the three preceding weeks, rose to 30 last week; 7 deaths were registered in London, 5 in Birmingham, 3 in Rhondda, 2 in Manchester, and 3 in Middlesbrough. The fatal cases of enteric fever, which had been 13, 9, and 13 in the three preceding weeks, were again 13 last week, and included 3 in London and 2 in Stoke-on-Trent.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had been 2232, 2108, and 2112 at the end of the three preceding weeks, had further declined to 1954 on Saturday last; 170 new cases of this disease were admitted during last week, against 248, 193, and 191 in the three preceding weeks. These hospitals also contained on Saturday last 957 cases of diphtheria, 778 of measles, 242 of whooping-cough, and 36 of enteric fever, but not one of small-pox. The 1406 deaths from all causes in London were 159 in excess of the number in the previous week, and were equal to an annual death-rate of 16·2 per 1000. The deaths resulting from diseases of the respiratory system, which had been 345, 285, and 287 in the three preceding weeks, rose to 300 last week, but were 81 below the number recorded in the corresponding week of last year.

Of the 5387 deaths from all causes in the 96 towns last week, 265 resulted from various forms of violence and 538 were the subject of coroners' inquests. The causes of 57, or 1·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in 13 of its 14 suburban districts, in Bristol, Bradford, Newcastle-on-Tyne, Nottingham, Portsmouth, Leicester, and in 49 other smaller towns. The 57 uncertified causes of death last week included 8 in Liverpool, 7 in Birmingham, 5 in Stoke-on-Trent, and 3 each in Burnley, Sheffield, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The weekly returns of the Registrar-General of Scotland will in future relate to 16 towns, two of the former 18 towns—Partick and Govan—having been added to the city of Glasgow. The population of the extended city is estimated at 1,021,500 persons in the middle of this year, and Glasgow thus becomes the second largest city in the United Kingdom. In the 16 Scotch towns, with an estimated aggregate population of 2,260,400 persons for 1913, 1132 births and 763 deaths were registered during the week ended Saturday, Jan. 4th. The annual rate of mortality in these towns, which had steadily declined from 22·0 to 17·1 in the four preceding weeks, slightly rose to 17·6 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 16·6, against 14·5 per 1000 in the 95 large English towns during the same period. Among the several Scotch towns the annual death-rates recorded last week ranged from 9·1 in Kirkcaldy, 10·8 in Hamilton, and 12·2 in Ayr, to 22·8 in Greenock, 23·3 in Dundee, and 24·0 in Leith.

The 763 deaths from all causes were 49 in excess of the number in the previous week, and included 66 which were referred to the principal epidemic diseases, against 61 and 43 in the two preceding weeks. Of these 66 deaths, 29 resulted from whooping-cough, 13 from diphtheria, 11 from infantile diarrhœal diseases, 5 from measles, 5 from scarlet fever, and 3 from enteric fever, but not one from small-pox. These 66 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·5 per 1000, which coincided with the rate in the 96 large English towns. The deaths attributed to whooping-cough, which had been 25, 29, and 18 in the three preceding weeks, rose to 29 last week, and included 18 in Glasgow, 3 in Edinburgh, 3 in Motherwell, 2 in Dundee, and 2 in Leith. The deaths referred to diphtheria, which had been 3, 11, and 5 in the three preceding weeks, rose to 13 last week; 4 deaths belonged to Glasgow and 3 to Dundee. The fatal cases of diarrhœa and enteritis among infants under two years of age, which had declined from 14 to 8 in the five preceding weeks, rose to 11 last week, of which number 5 occurred in Glasgow, 2 in Dundee, and 2 in Aberdeen. The 5 deaths attributed to measles last week were slightly in excess of the average in recent weeks, and included 2 deaths recorded in Motherwell. The 5 deaths referred to scarlet fever were equal to the average in the four preceding weeks, and comprised 3 in Glasgow, 1 in Greenock, and 1 in Coatbridge. Of the 3 fatal cases of enteric fever 2 occurred in Aberdeen and 1 in Glasgow.

The deaths referred to diseases of the respiratory system in the 16 Scotch towns, which had steadily declined from 249 to 170 in the four preceding weeks, further fell to 167 last week; 23 deaths were attributed to different forms of violence, against 27 and 30 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

The weekly return of the Registrar-General of Ireland will in future relate to 27 town districts with an estimated aggregate population of 1,199,180 persons in the middle of this year. In these 27 districts 756 births and 504 deaths were registered during the week ending Saturday, Jan. 4th. The annual rate of mortality, which in the 22 town districts had been 18·4, 20·6, and 15·4 per 1000 in the three preceding weeks, was last week equal to 21·9 in the 27 districts. During the 13 weeks of last quarter the mean annual death-rate in the 22 town districts averaged 18·1 per 1000, against corresponding rates of 14·5 and 16·6 per 1000 in the large English and Scotch towns respectively. The annual death-rate recorded in the several Irish towns last week was equal to 22·8 in Dublin (against 16·2 in London and 17·1 in Glasgow), 23·8 in Belfast, 27·2 in Cork, 14·0 in Londonderry, 17·6 in Limerick, and 30·4 in Waterford, while in the remaining 21 smaller towns the mean rate did not exceed 16·1 per 1000.

The 504 deaths from all causes in the 27 Irish towns included 50 which were referred to the principal epidemic diseases, against 60 and 41 in the two preceding weeks in the 22 towns. Of these 50 deaths, 20 resulted from measles, 12 from diarrhœal diseases, 8 from diphtheria, 6 from whooping-cough, 2 from enteric fever, and 2 from scarlet fever, but not one from small-pox. These 50 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·2 per 1000, against a corresponding rate of 1·5 per 1000 in the English and Scotch towns. The deaths attributed to measles, which had averaged 25 in the three preceding weeks, fell to 20 last week, and included 17 in Belfast, 2 in Dundalk, and 1 in Limerick. The deaths referred to diarrhœa and enteritis, which had been 7, 17, and 6 in the three preceding weeks, rose to 12 last week, 10 of which related to infants under 2 years of age; 7 deaths were registered in Dublin and 2 in Belfast. The fatal cases of diphtheria, which had averaged 4 in each of the preceding two weeks, rose to 8 last week, and

comprised 3 in Belfast, 3 in Cork, and 2 in Dublin. The 6 deaths attributed to whooping-cough were slightly in excess of recent weekly numbers, and included 2 in Dublin and 2 in Drogheda. The 2 deaths referred to enteric fever were recorded in Cork, and the 2 fatal cases of scarlet fever in Dublin and Belfast respectively.

The deaths referred to diseases of the respiratory system, which in the 22 Irish towns had been 94, 96, and 85 in the three preceding weeks, rose to 96 in the 27 towns in the week under notice. Of the 504 deaths from all causes, 189, or 38 per cent., occurred in public institutions, and 10 resulted from different forms of violence. The causes of 18, or 3·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death last week did not exceed 1·1 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeon: P. H. M. Star to the *Terrible*, and for group of ships of Third Fleet. Staff Surgeon: A. C. W. Newport to the *Aboukir*, and for group of ships of Third Fleet.

ARMY MEDICAL SERVICE.

Colonel Richard Jennings, honorary surgeon to the King, on completion of four years' service in his rank, is placed on the Half-pay List (dated Dec. 31st, 1912). Colonel R. Jennings, Half-pay List, is placed on retired pay (dated Jan. 2nd, 1913).

Lieutenant-Colonel Alan E. Tate, from the Royal Army Medical Corps, to be Colonel, vice R. Jennings (dated Dec. 31st, 1912).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Horace Cocks retires on retired pay (dated Jan. 4th, 1913).

Lieutenant-Colonel George Wilson is placed on retired pay (dated Jan. 6th, 1913).

The undermentioned Majors to be Lieutenant-Colonels: John D. Ferguson, D.S.O., vice A. E. Tate (dated Dec. 31st, 1912); and John C. Connor, vice H. Cocks (dated Jan. 4th, 1913).

Major Hubert A. Bray is seconded for service with the Egyptian Army (dated Oct. 15th, 1912).

Captain Carlisle Kelly, from the half-pay list, is restored to the establishment, with precedence next below Walter H. S. Burney (dated Jan. 5th, 1913).

Colonel R. H. Firth, honorary surgeon to H.E. the Viceroy and Governor-General of the East Indies and Sanitary Officer Army Headquarters Staff, Simla, has been selected for appointment as Assistant Director of Medical Services to the First (Peshawar) Division of the Northern Army in India, in succession to Colonel S. C. B. Robinson, retired. Colonel H. O. Trevor has taken up duty as Assistant Director of Medical Services in the Cork District on transfer from Belfast.

Lieutenant-Colonel H. H. Brown has been appointed Senior Medical Officer of the North-Eastern Coast Defences, with headquarters at Newcastle-on-Tyne, in succession to Lieutenant-Colonel H. M. Adamson, whose tenure of the appointment has expired. Lieutenant-Colonel R. J. Windle, on arrival in India for a tour of duty, has been selected for appointment to command the Military Hospital at Poona. Lieutenant-Colonel G G. Adams has been appointed to command the Military Hospital at Secunderabad. Lieutenant-Colonel A. J. Luther, on arrival for a tour of duty in South Africa, has been selected for appointment as Senior Medical Officer at Potchefstroom and to hold charge of the Military Hospital. Lieutenant-Colonel J. Fallon has taken over charge of the Military Hospital at Lahore Cantonment.

Major J. D. Ferguson, D.S.O., senior medical officer, London Recruiting Area, has been selected for appointment as Medical Inspector of Recruits in the Eastern Command in succession to Lieutenant-Colonel G. Cree, appointed Assistant Director of Medical Services at Bordon, Aldershot Command. Major G. J. Houghton, at present serving in the London District, has been placed under orders for a tour of duty in the Sierra Leone Protectorate, West Africa. Major N. Faichnie has been transferred from the Fifth (Mhow) Division to the Seventh (Meerut) Division of the Northern Army in India. Major A. G. Thompson has been selected for appointment to command the Military Hospital at Pachmari for a period of two years. Major W. E. Hardy has vacated his appointment as medical officer in charge of the Guards' Depôt at Caterham and embarked for a tour of service in India. Major R. V. Cowey has been transferred from the Military Hospital at Tidworth, Salisbury Plain, to Bulford Camp. Major D. E. Curme has taken up duty at Aldershot on transfer from Ewshott. Major R. L. Argles, on return from a tour of service with the Aden Brigade, has been appointed to the Irish Command. Major F. W. Begbie, lately surgical specialist at the Military Hospital, Colchester, has been appointed to command the Station Hospital at Kamptee Cantonment. Major T. B. Unwin, at present stationed in the London District, has been detailed for a tour of service on the West Coast of Africa.

Captain P. C. T. Davy, on return from India tour-expired, has been appointed for duty to the Eastern Command. Captain D. L. Harding has been transferred from Omagh to the Military Hospital at Belfast. Captain S. L. Pallant has taken up duty at Wedgnock Park Camp on transfer from the Royal Victoria Hospital at Netley. Captain J. W. L. Scott, on completion of a tour of duty at Aden, has been appointed to the Southern Command. Captain G. P. A. Bracken, in charge of the Military Hospital at Malappuram, Madras Presidency, has been appointed for duty on board the transport s.s. *Plassy* (cot-ship), leaving Bombay for Southampton with invalids on Jan. 9th. Captain P. S. Tomlinson has been appointed by the Lieutenant-Governor of the United Provinces of Agra and Oudh to hold Civil Medical Charge of Roorkee, in addition to his military duties. The following officers have joined at the Royal Army Medical College, Grosvenor-road, S.W., for the promotion courses to the rank of Major: Captains R. H. L. Cordner (from Upavon), H. G. Sherren (Bordon), R. P. Lewis (Aldershot), J. H. Graham (Ballincollig), G. E. Ferguson (Wool Camp), T. Scatchard (Ad Fines Camp), V. H. Symons (Enniskillen), R. A. Bryden (Hounslow), E. L. Moss (Newbridge), M. J. Cromie (Glen of Imaal), and G. W. W. Ware (Cosham). Captain A. D. Stirling has been transferred from the Military Hospital at Alexandria to Cairo for duty. Captain H. W. Farebrother has taken up duty at the Military Hospital, Rangoon, on transfer from Meiktila Cantonment, Upper Burma. Captain G. H. Richard has been appointed to hold charge of the Military Hospital at Weedon. Captain D. P. Watson has taken up duty as Assistant Clinical Pathologist at Queen Alexandra's Military Hospital, Grosvenor-road, S.W., during the absence of Captain A. B. Smallman, on special service with units of the British Red Cross Society attached to the Turkish Army. Captain L. J. Jones has been transferred from Secunderabad Cantonment and appointed to command the Military Hospital at Calicut, Madras Presidency. Captain R. S. Smyth, on arrival home from Ambala Cantonment, has been appointed for duty to the Military Hospital at Cosham.

Lieutenant W. L. E. Fretz has embarked for a tour of duty in India. Lieutenant W. Stewart has been transferred from Great Yarmouth to Colchester for duty at the Military Hospital. Lieutenant E. L. Fyffe and Lieutenant C. H. H. Harold have left Cork and London respectively and taken up duty in India. Lieutenant H. R. L'Estrange has joined the Military Hospital at the Curragh Camp on transfer from the Cork District. Lieutenant E. C. Stoney has been transferred from the Military Hospital at Secunderabad to the Burma Division for a tour of duty.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel R. C. Macwatt has been selected for appointment to officiate as Civil Surgeon of the First Class and Administrative Medical Officer in Rajputana. Lieutenant-Colonel E. P. Maynard has been appointed an Ordinary Fellow of the Calcutta University under the Education Department of the Government of India. Lieutenant-Colonel W. G. Pridmore, ophthalmic surgeon at the General Hospital, Rangoon, has been granted two years' leave of absence combined with furlough home from India. Lieutenant-Colonel P. Strickland has been granted an extension of his leave of absence home from India.

Major F. F. Elwes has been selected for appointment to officiate as Surgeon to H.E. the Governor of Madras Presidency, in addition to his own duties, until the appointment of a successor to Major L. F. Gilbert. Major E. C.

MacLeod, on return from leave of absence, has been appointed Civil Surgeon at Darrang. The services of Major E. L. Ward have been replaced at the disposal of the Government of the Punjab. Major W. H. Kenrick has been granted furlough for four months in extension of his combined leave by the Right Honourable the Secretary of State for India. Major J. C. S. Oxley has been appointed Civil Surgeon at Chanda in succession to Captain F. P. Wernicke, transferred to Nagpur and placed on general duty. Major E. D. W. Greig has been placed upon Special Duty under the orders of the Director-General of the Indian Medical Service. The services of Major G. Y. C. Hunter have been placed at the disposal of the Government of Behar and Orissa. Major P. Dee, civil surgeon at Mandalay, has been placed in Medical Charge of the Central Jail, Mandalay, in addition to his own duties, in succession to Captain P. K. Tarapore, who has been granted leave of absence.

Captain H. B. Drake has been selected for appointment as Deputy Assay Master at Bombay. Captain A. E. Walker, on return to duty from leave of absence, has been appointed to officiate as Ophthalmic Surgeon at the General Hospital, Rangoon, during the absence of Lieutenant-Colonel W. G. Pridmore. H.E. the Governor of Bombay in Council has been pleased to appoint Captain T. H. Gloster to officiate as Assistant to the Director of the Bombay Bacteriological Laboratory in succession to Captain J. Morrison, on special duty. Captain S. T. Crump has arrived home on leave of absence from India. Captain H. C. Keates, officiating civil surgeon at Dera Ghazi Khan, has been transferred to Campbellpur, Attock District, for duty. The services of Captain W. J. Powell, officiating superintendent of the Central Jail at Jubbulpore, have been replaced at the disposal of the Government of India. Captain J. C. G. Kunhardt has been placed on special duty under the orders of the Director-General of the Indian Medical Service. Captain I. M. Macrae, superintendent of the Central Prison at Lucknow, has been placed under orders for transfer from Lucknow to Agra. Captain H. R. Nutt, officiating civil surgeon at Azamgarh, has been granted privilege leave of absence combined with furlough for a total period of one year. Captain G. T. Davys has been granted an extension of leave of absence for study purposes. Captain N. M. Wilson has relinquished charge of the duties of the superintendent of the Shahpur District Jail. Captain F. W. Sumner, civil surgeon, on return from leave of absence, has been appointed to Farrukhabad. Captain A. W. Howlett, officiating superintendent at the Central Prison, Agra, has been placed under orders for transfer to Bhim Tal for special duty. The services of Captain A. W. C. Young have been placed at the disposal of the Chief Commissioner of the Delhi District for employment as Medical Officer of Health at Delhi. Captain M. A. Nicholson has been selected for appointment as Specialist in the Prevention of Disease, and placed in charge of the Brigade Headquarters, Bacteriological Research Laboratory, at Bannu.

Lieutenant J. V. Macdonald has been transferred to the Civil Department from military employment for appointment as Medical Officer to the Mishmi Survey Party.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Captain Denis Murphy resigns his commission (dated Jan. 4th, 1913).

Cadet-Corporal Alan Cecil Perry, from the University of London Contingent, Officers' Training Corps, to be Lieutenant (on probation) (dated Dec. 2nd, 1912).

TERRITORIAL FORCE.

Royal Garrison Artillery.

Essex and Suffolk Royal Garrison Artillery: Surgeon-Major Charles Forsyth resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 4th, 1913).

Royal Army Medical Corps.

1st Highland Field Ambulance, Royal Army Medical Corps: Lieutenant John D. Fiddes to be Captain (dated Dec. 10th, 1912).

2nd North Midland Field Ambulance, Royal Army Medical Corps: Lieutenant Richard M. West to be Captain (dated Dec. 9th, 1912).

1st London (City of London) General Hospital, Royal Army Medical Corps: Captain Henry N. Burroughes resigns his commission (dated Jan. 8th, 1913).

3rd Scottish General Hospital, Royal Army Medical Corps: Quartermaster and Honorary Captain Hugh Miller resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 8th, 1913).

4th Southern General Hospital, Royal Army Medical Corps: Gerald Charles Frederick Robinson to be Captain, whose services will be available on mobilisation (dated Dec. 3rd, 1912).

Attached to Units other than Medical Units.—Captain William Bain, from the 6th London Field Ambulance, Royal Army Medical Corps, to be Captain (dated Jan. 4th, 1913). Lieutenant Henry R. Wadd resigns his commission (dated Jan. 8th, 1913).

For attachments to Units other than Medical Units.—George Bruce Pearson to be Lieutenant (dated Dec. 1st, 1912).

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on Jan. 7th, Sir J. Dick, K.C.B., in the chair, the sum of £50 was distributed among the several applicants.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The January issue of this journal commences the twentieth half-yearly volume and opens with an article by Major W. S. Harrison on Streptococcus Rheumaticus and Rheumatic Fever, leading to the conclusion that there is no evidence that the S. rheumaticus is the cause of the usual kinds of rheumatic fever. Vaccine Treatment in Subacute and Chronic Arthritis is the subject of a short paper by Captain P. C. T. Davy, which, from a clinical point of view, is also of interest. Reverberations of the sounds of war in the Balkans have not yet wholly died away, and the account of the Organisation and Dispatch of Red Cross Units to the Seat of War, by Colonel James Magill, C.B., organising secretary of the British Red Cross Society, should appeal to the lay as well as to the military mind. The total *personnel* of the Red Cross units sent to the seat of war was: 3 directors, 34 medical officers, 35 dressers, 1 X ray operator, 9 sergeants, 2 clerks, 5 cooks, 49 nursing orderlies, 69 orderlies (general duty), and 6 trained female nurses, making a total of 213 persons. Leaving aside the question of derivation as to whether a knapsack is a "schnappsack" or a haversack a "hafer" or oat sack—for derivation, though a subject of absorbing interest, does not always lend itself to satisfactory conclusions—Captain N. Dunbar Walker's description of knapsacks in the British and other armies is a useful contribution to the question of the proper equipment of the soldier. The article is well illustrated and some 37 references are made to books and papers dealing with the subject. The great ingenuity of the Japanese is shown in a holdall consisting of a long tube of cloth open at both ends but sewn across midway between the openings, thus making two compartments. When in case of need the great coat and other heavy accessories have to be discarded by the soldier, the emergency ration is put in one compartment, the other is filled with ammunition, and the whole slung over the right shoulder, the loose ends being tied under the opposite arm.

ARCHIVES DE MÉDECINE ET PHARMACIE NAVALES.

In the October number Dr. Ratel and Dr. Lepeuple, of the French Navy, report on the wounds that came under their notice at Hankow during the Chinese Revolution in November, 1911. They note that bullet wounds caused relatively little trouble, but shell wounds killed many men at once, so relatively few came under treatment, but those they mention were very severe. One man had the four lower ribs and the abdominal wall on the right side carried entirely away; an officer had the soft tissues of the right side of the face lifted by a shell fragment which removed the malar bone, the front of the antrum, the nasal bones, and the nasal spine of the frontal; the skin flap sloughed, but the patient was discharged from hospital after three months nearly cured. Mr. Arbuthnot Lane's method was used, with very good result, for a gunshot fracture of the clavicle. The fractures of bones gave a great deal of trouble. The patients came under treatment with their wounds already infected. In place of bandages, indiarubber plaster was constantly used, being more efficient, holding dressings more steadily in place, and being cheaper. Médecin Principal (Fleet-Surgeon) Dargein gives an account of a malingerer's trick in the French navy recently brought to his knowledge. He

had half a dozen cases of puzzling jaundice, one of them a man who was for draft abroad; and he found that they take a grain of picric acid three times a day and become jaundiced in skin and mucous membranes (eye, mouth, and glans penis). The jaundice is atypical, the stools are not lighter but darker, there is no bile in the urine—at first at any rate, the pulse is not slowed, there is no itching of the skin nor change in volume of the liver.

ARMY MEDICAL ADVISORY BOARD.

The Secretary for War has approved the following appointments on the Army Medical Advisory Board: Civilian Physiologist, Dr. Leonard E. Hill; Civilian Sanitary Expert, Dr. Henry S. Kenwood, in succession to Dr. M. S. Pembrey and Dr. L. C. Parkes, whose term of service has expired.

ATTACK BY CONVICTS UPON AN OFFICER OF THE INDIAN MEDICAL SERVICE.

A serious riot occurred on Nov. 27th last in the Madras Penitentiary. An experimental change of diet, the *Allahabad Pioneer* states, which was ordered by the Government of India and inaugurated during the month of November, was resented by the convicts, who, having apparently concluded that Captain J. P. Cameron, I.M.S., the superintendent of the penitentiary, was responsible for it, decided to vent their annoyance upon him. Some of the convicts employed in the Press Department of the penitentiary are supplied with brass and iron rods for the purpose of their work. Armed with these and other weapons the more daring of the discontented convicts attacked Captain Cameron upon his entering the Press Department, and warders coming to his assistance in response to an alarm, a general *mêlée* ensued between the convicts and the jail staff. There were 400 convicts in the Press Department, and matters assumed so threatening an aspect that the warders opened fire upon the rioters, who thereupon dispersed and quieted down. Two convicts were killed and several wounded. Captain Cameron was severely hurt, receiving injuries about the head and body, and several warders were injured.

Correspondence.

"Audi alteram partem."

PROTECTIVE FERMENTS OF THE ANIMAL ORGANISM.

To the Editor of THE LANCET.

SIR,—I notice at p. 39 of THE LANCET of Jan. 4th a review of a recent work of Professor Abderhalden on this subject. In relation to this I may perhaps be allowed to quote a passage from the address which I gave at the International Congress in Moscow on August 18th, 1897. "Perhaps the hypothesis I mentioned eight years ago to my pupil and friend, Mr. Hankin (quoted by Mr. Hankin, Proceedings of the Cambridge Philosophical Society, Vol. VII., Part. 1, p. 20, Nov. 11th, 1889), that the germicidal power of organisms is proportional to their power to produce enzymes, may not be altogether unfounded, and possibly we may discover also that immunity, natural or acquired, is nothing more than an extension to the cells of the tissues generally, of a power which is constantly exercised during digestion by those of the intestine and liver." Another observation which also bears on this subject is one made by the late Dr. Macfadyen and myself (Proceedings of the Royal Society, Vol. XLVI.) that bacteria not only excrete enzymes which will digest proteids or hydrocarbons quite apart from the bacteria which have formed them, but that bacteria have the power of adapting the enzyme they secrete to the soil on which they are growing, so that the same bacterium which has been secreting peptonising enzymes on a proteid soil will secrete a diastatic enzyme when transferred to a carbohydrate soil. This is exactly the power which Pavlow has shown to exist in the pancreas of the higher animals. The adaptation to new food is more rapid in the higher animals than in bacteria, and in my Croonian lectures in 1899 I adduced this as a probable explanation of the useful effect of sudden change of food from milk to starchy food and from starchy food again to raw meat in arresting the diarrhœa of infants. Another thing which Macfadyen and I discovered was that a temperature which would kill the bacilli would not kill the ferments they had already produced, and this may possibly explain the after-effects of some infective diseases when the pathogenic organisms which produced them have disappeared from the body.

I am, Sir, yours faithfully,

Stratford-place, W., Jan. 4th, 1913. LAUDER BRUNTON.

A PRELIMINARY NOTE ON THE EFFECT OF SEMPERVIVUM TECTORUM IN CANCER.

To the Editor of THE LANCET.

SIR,—For many years I have been much struck by the action of the juice of sempervivum, or common houseleek, upon warts. If the juice of this plant is well rubbed over the surface of a wart several times daily for a period of two or three weeks it will almost invariably remove the growth. This effect on the overgrowth of epithelial cells impressed upon me the possibility of its exerting a similar action if brought into direct contact with the cells of a cancerous growth.

I waited long for the opportunity of obtaining not merely a suitable case but also a patient willing to submit to the treatment suggested. It was, therefore, with no small satisfaction to me that in January of last year a typical case presented itself, and the patient proved to be an ideal one, as she took as keen an interest in the treatment as I did myself. The lady is 54 years of age. When she consulted me she stated that her left breast had caused her some anxiety for about 12 months, but she had hesitated to consult anyone on the subject. Upon examination I found the whole breast much enlarged, infiltrated with hard, scirrhous, nodulated masses, and the nipple deeply retracted. The axillary glands on the same side were also infiltrated and adherent to the deep fascia.

I advised her to see Mr. W. Thelwall Thomas, who kindly wrote to me the following day. He said: "This case is inoperable. The growth is very extensive. It is attached to the pectoral muscles, and the secondary growth in the axilla is fixed to the axillary vein and deeper structures."

I at once told my patient of the unfavourable report, and informed her that the only suggestion for further treatment that I could offer was a series of subcutaneous injections with a drug that I had found successful in the removal of warts. As she immediately consented to submit herself to any treatment I desired, I asked Mr. J. R. Strick, of Upper Brighton, to prepare for me a sterile juice of sempervivum, and I commenced the injections at once. Mr. Strick also made an ointment of the juice, which I employed as supplementary treatment by inunction. I also administered the drug internally.

The dosage was a difficulty at first, as I had no experience of its possible effects, but by commencing with 5 minims, and gradually increasing it, I soon found that I could safely inject 15 minims without reaction. I therefore requested Mr. Strick to make me a concentrated preparation of the juice, and although this stronger preparation did cause some temporary imflammatory reaction I have used it continuously since increasing its strength. The first encouraging result I observed was at the end of the first month's treatment. The patient informed me then that her pain was relieved, and some "tingling" sensations which she had experienced were absent. She looked better and certainly did not lose weight. Up to this point I had been giving only one, or sometimes two injections twice weekly, but from this time onwards I gave three injections on each occasion, and sometimes one in the axilla.

By the end of the second month there was distinct flattening of the lower mammary zone. The patient's health was much improved and she continued to be free from pain. During the third month the treatment was suspended, owing to an acute attack of gout in the foot. Upon resuming treatment the concentrated juice was still employed. This induced some pain and considerable local induration for several days, and I was afraid might lead to further irritation; however, in about ten days these local symptoms entirely disappeared, and the concentrated preparation has since that time been employed without further interruption.

After 12 months of treatment I am encouraged to publish this preliminary note in order to induce others to give the treatment a trial. The points of interest are that in an inoperable case of mammary carcinoma under observation for ten months we have: (1) relief of pain; (2) diminution of growth; (3) improved general health; and (4) increase of body weight. The patient has gained 4 lb. in weight.

I hope to contribute a note on the chemical properties of sempervivum and further details of cases at an early date.

Patient still most satisfactory.

I am, Sir, yours faithfully,

BOUVERIE F. P. MCDONALD, M.D. Edin.,
Consulting Surgeon, Victoria Central Hospital.

New Brighton, Jan. 7th, 1913.

P.S.—The following are the details of the preparation of the juice of the houseleek as prepared by Mr. Strick, of Upper Brighton: Take 2 lb. of the fresh herb. Carefully clean from all earthy matter. Subject to pressure, and allow the juice to stand for two hours; strain from flocculent deposit; evaporate the strained product on a water bath to one-half of its volume. Allow to cool, filter, and sterilise.

DRUNKENNESS AND THE EFFECT OF ALCOHOL.

To the Editor of THE LANCET.

SIR,—"A. B. C." quotes the Lord Chief Justice [1] as saying that 90 per cent. of the crime in this country is due to the indulgence in strong drink (I thought it was 60 per cent. his lordship stated). May I point out in opposition to this figure that Sir Forrest Fulton, K.C., City Recorder, in charging the grand jury last January stated that comparatively few cases were traceable to drink, but, on the other hand, he was afraid it was from his experience greatly due to gambling not only in horse-racing but the "bucket shops."

Again, the Rev. J. Cartmel-Robinson (himself a teetotaler) reported: "The deepest impression I have brought away from Dartmoor is that drink is not responsible for the serious crimes to anything like the extent some people imagine. Yes, and I was surprised myself at this discovery. ..... Many of them I found had been lifelong teetotalers."

We should, as a profession, follow the teaching in Proverbs xxxi. 6: "Give strong drink unto him that is ready to perish, and wine unto those that be of heavy hearts."

Excessive drinking is gradually decreasing by example, and it will be found that temperance is preferable to teetotalism among level-headed men and women.

I am, Sir, yours faithfully,

New Cavendish-street, W., Jan. 4th, 1913. THOMAS DUTTON.

A SUGGESTED FACTOR IN THE CAUSATION OF CHRONIC CATARRHAL OTITIS MEDIA.

To the Editor of THE LANCET.

SIR,—Since I have been using the nasopharyngoscope as a routine method of examination in all aural cases I have seen many things which, so far as I am aware, have not been previously described, and it is to one of these that in this short communication I wish to draw attention.

The condition to which I refer is one in which the anterior lip of the Eustachian tube is attached to the posterior extremity of the inferior turbinal by means of a fibrous band. This does not sound at all extraordinary, but the condition is, in my experience, usually associated with a stricture of the Eustachian tube. We are told in books that the most common place for strictnre of the Eustachian tube is at the junction of the cartilaginous with the osseous portion of the tube, and that this point is situated at a distance of about 25 millimetres from the pharyngeal orifice. At present, distances and measurements in the Eustachian tube are mere guesswork, as it is impossible to tell how far the catheter itself enters the tube. Now, in the condition I have described, there is, as a rule, a stricture of the Eustachian tube, but this is situated, allowing for error, at a distance of 10 millimetres from the pharyngeal end of the tube. For a long time I was puzzled to account for this place of origin and was rather inclined to think it a mere coincidence, but case after case turned up with the same nasopharyngoscopic picture and the same stricture about 10 millimetres up the tube. I, therefore, had to look a little deeper than coincidence, and my own idea on the condition is as follows: The band, from the anterior lip to the inferior turbinal, is caused as the result of an old, long-standing nasal, or pharyngeal, catarrh. Now, the Eustachian tube, in its course from the tympanum to the pharynx, crosses the internal pterygoid plate of the pterygoid process of the sphenoid bone, at the Eustachian groove and the anterior and inferior surfaces of the tube at this point are formed by the salpingo-pharyngeus fascia. They are, therefore, comparatively easily compressed. The band from the anterior lip to the inferior turbinal in course of time, as with all other fibrous bands, contracts, and by its contraction the anterior lip of the tube is pulled forward and the tube itself is bent or kinked over the internal pterygoid plate of the sphenoid bone. The measurement of this point, allowing for error, is about 10 millimetres from the pharyngeal orifice of the tube, and this distance corresponds to what one might expect by observation on the cadaver.

I write this merely as a preliminary idea and not as conclusive of anything. The whole thing has yet to be worked out more fully.—I am, Sir, yours faithfully,

ADAIR DIGHTON, F.R.C.S. Edin.

Liverpool, Dec. 26th, 1912.

[1] THE LANCET, Jan. 4th, 1913, p. 62.

EMETINE SALTS IN THE TREATMENT OF DYSENTERY.

To the Editor of THE LANCET.

SIR,—In your issue of Oct. 26th, 1912, Lieutenant-Colonel Tull Walsh questions my recently reported treatment of amœbic dysentery being new on the ground that he gave emetine salts by the mouth in 1891. If he will take the trouble to read my paper again he will find that the essential point of my treatment is the hypodermic injection of soluble salts of emetine, which, as far as I have yet been able to ascertain, is new. That the change in the method of administration is an all-important one will be evident from the fact Lieutenant-Colonel Tull Walsh states in his paper: "I do not think it matters one straw what drugs you use, or whether these drugs are given by the mouth or in the form of injections into the lower bowel"; whereas reports reach me almost daily from all parts of India, and far beyond, of the remarkable results obtained by my plan of treatment.

I am, Sir, yours faithfully,

Calcutta, Dec. 17th, 1912. LEONARD ROGERS, I.M.S.

DIPHTHERITIC ENTERITIS.

To the Editor of THE LANCET.

SIR,—The remarkable case related by Dr. H. M. Cargin on p. 23 of THE LANCET of Jan. 4th, though extremely uncommon, is not unique. Necrosis of the mucous membrane of the lower end of the ileum, sigmoid flexure, and rectum, presenting the histological and bacteriological appearances of diphtheria, was found by J. Günther [1] at the necropsy of a case of diphtheria and measles in 1907, and since then three cases of intestinal diphtheria have been published by McKechnie,[2] Schmitten,[3] and Everall,[4] respectively. In both McKechnie's and Everall's cases casts of the bowel were passed, antitoxin was injected, and recovery took place after more or less extensive paralysis. In McKechnie's and Schmitten's cases the disease was confined to the intestine, while Everall's patient, like Dr. Cargin's, had nasal and faucial diphtheria as well.

Cases of this kind raise the question as to the excretion of Klebs-Löffler bacilli in the stools of diphtheria patients. Comparatively few coprological investigations on such cases have been made. Negative results were obtained by Susswein,[5] but both Schoedel [6] and Bosse [7] found the bacilli in the fæces of diphtheria cases. As a rule the bacilli from the faucial lesions after being swallowed are destroyed by the gastric juice, but when this secretion is

[1] Centralblatt für Bakteriologie, 1907, Orig., xliii., p. 648.
[2] Montreal Medical Journal, 1909, xxxviii., p. 515.
[3] Journal of American Medical Association, 1910, lv., p. 1842.
[4] Ibid., 1911, lvi., p. 199.
[5] Wiener Klinische Wochenschrift, 1902, xv., p. 148.
[6] Münchener Medizinische Wochenschrift, 1900, xlvii., p. 895.
[7] Centralblatt für Bakteriologie, 1903, Orig., xxxiii., p. 478.

impaired, as it is liable to be in any acute infection, the organisms pass into the intestine, and may, as Schoedel suggested, provoke the follicular enteritis so often found post mortem in diphtheria. Necrosis of the intestinal mucosa, with separation and subsequent passage of a cast, implies only a further degree of inflammation.

The excretion of Klebs-Löffler bacilli in the fæces is not only of interest from the epidemiological standpoint, but may also, as suggested by Delbanco and Haas,[8] account for some instances of anal diphtheria, an example of which, in association with numerous other lesions, I recently published in these columns.[9]—I am, Sir, yours faithfully,

J. D. ROLLESTON.

Grove Fever Hospital, S.W., Jan. 4th, 1913.

THE CHILDREN'S WELFARE EXHIBITION.

To the Editor of THE LANCET.

SIR,—On invitation we gave our names as patrons of the Children's Welfare Exhibition now open at Olympia, which has been organised by the *Daily News*. We have learned that the exhibition is being utilised to oppose the carrying out of vaccination. As we cannot too emphatically express our disapproval of such an object, and as our names have been associated with the exhibition, we think it only right to say that we should never have permitted them to appear in connexion with it had we any idea that such use would be made of the exhibition as the one referred to.

We are, Sir, yours faithfully,

H. MACNAUGHTON-JONES.
C. W. SALEEBY.
MACLEOD YEARSLEY.

Jan. 3rd, 1913.

UNILATERAL ASTHMA.

To the Editor of THE LANCET.

SIR,—If Dr. West had consulted the text of my book a little more attentively than he has done[1] he would have found on p. 18, third edition, the cases to which I referred him. I fear, however, that even then Dr. West will not be convinced of the occurrence of a "unilateral asthma," because he and I differ in our views on the nature of the dyspnœal seizures that may be so-called. Dr. West explains it on the ground of a theory which has been elaborated at the desk and is still disputed: whereas I have without preconceptions deduced it from the clinical facts—not merely from the physical signs during a paroxysm, but also from the associated phenomena, from the constitution of the patients, and from the constant antecedents and sequelæ. With regard to Dr. West's objection to the conclusion at which I have arrived, and which he has not quite correctly represented, I can only say that his statements about fibrinous bronchitis are somewhat too dogmatic and pertain rather to the acute, descending form of it, which affects the main and large bronchi, than to the chronic and acute recrudescent exudation into the smaller and smallest tubes which is one of the conditions that conduce to asthma. Nor are there the essential differences either in their pathology or in their clinical manifestations, as Dr. West alleges, between asthma and plastic bronchitis. If Dr. West would reflect on the frequent occurrence of Curschmann's spirals and Charcot-Leyden crystals in both these affections, if he would inquire into the identity of the chemical composition of their morbid products, &c., he would probably admit that there is a very close parentage between them.

But the point at issue is not my view of asthma, but Dr. West's denial of a "unilateral asthma." Again I must refer him to the treatise of Siegel, who completely sides with him in the assumption of a "bronchial spasm." Before Siegel knew what I had written on the subject, he claimed it as an original observation of his that spasmodic asthma was occasionally unilateral. Of course, Dr. West may retort that Siegel's cases were not spasmodic asthma. But I submit that Siegel has just as much warrant to call them so as Dr. West has with regard to his cases. So far as I am concerned, I am afraid I must adhere to my opinion. If Dr. West will show me one single case of recurrent attacks of dyspnœa in which this is demonstrably due to a transient endogenous obstacle in the bronchial tree, which is not partially or completely relieved by the expectoration of the morbid products which I have described; which occurs in a perfectly healthy individual who has no deformity of the thorax; and which has not been preceded for an indefinite period by acute protracted or chronic recurrent affections of the air passage; if Dr. West will show me such a case I will at once and frankly confess myself to have hitherto been in error.

I am, Sir, yours faithfully,

Wimpole-street, W., Dec. 30th, 1912. J. B. BERKART.

THE EXAMINATION FOR THE DEGREE OF M.S. LONDON.

To the Editor of THE LANCET.

SIR,—I shall be glad if you will publish this reply to your correspondent, "A Former Examiner in Surgery for the M.S." I ask this for the following reasons.

Firstly, he is incorrect in his statement that 12 of the 15 candidates at the recent examination were rejected. Actually 7 out of 10 were rejected. Though I do not know the number of candidates at the summer examination, I think he is again incorrect, and that 1 candidate, and not 2, passed.

Secondly, as the examiners probably cannot reply to his letter themselves, any more than he could if someone had anonymously quarrelled with his awards, I would like to express my opinion as a recent candidate that they should not be described as "at fault." Throughout the whole of my examination I felt emphatically that I had never before received such careful, earnest, and fair investigation of my knowledge such as it was. I speak from a sad experience of sitting for 19 professional examinations and failing 8 times therein. Out of it all one prime idea will always be remembered by me, that the Final F.R.C.S. was the worst. This was not because it required so much knowledge or common-sense, but because the element of chance entered considerably into an examination already made difficult enough by its high standard. I shall always look on my M.S. examiners as assessors, but cannot do so on some of the examiners I have met at the Final Fellowship.

Lastly, Sir, surely since the F.R.C.S. is a necessity for the pure surgeon, and is also open to anyone who can pass the two examinations for it (within the month if they can and are Members), may not the M.S. be allowed to maintain its present high position as an "honours" examination?

I am, Sir, yours faithfully,

Jan. 4th, 1913. M.S. LOND., F.R.C.S. ENG.

To the Editor of THE LANCET.

SIR,—Your correspondent, "A Former Examiner in Surgery for the M.S.," is in error in stating that the M.S. corresponds to the M.D. Lond. The latter degree is held by about 2000 medical men, the majority in general practice, and any well-educated practitioner should be able to obtain the degree. The M.S. is held by less than 200 men and women. The great bulk of these are consultants practising either surgery or gynæcology, and on this account the University quite rightly insists on a very high standard for the degree. It is not intended that the degree should compete with the Fellowship, which is usually taken by much younger men, many of them with little experience of the practice of surgery, and only a few of whom become consultants.

So far from injuring the University, the determination to maintain the M.S. as the highest surgical qualification obtainable is bound to reflect credit on both the University and its examiners. I regret to say most of its degrees have not been kept up to their former high standard.

I am, Sir, yours faithfully,

Jan. 4th, 1913. M.S. LOND.

To the Editor of THE LANCET.

SIR,—I find that I was in error in quoting the numbers at the last examination for this degree. There were three successful candidates out of ten, not out of 15 as I stated. Though the proportion of passes is higher, still is seems to me to be too low.

I am, Sir, yours faithfully,

Jan. 8th, 1913. A FORMER EXAMINER.

[8] Münchener Medizinische Wochenschrift, 1909, lvi., p. 2394.
[9] THE LANCET, Sept. 24th 1910, p. 947.
[1] THE LANCET, Dec. 21st, 1912, p. 1750.

A "TYPHO-MALARIAL" FEVER.

To the Editor of THE LANCET.

SIR,—Twenty years ago the diagnosis of the fevers of warm countries was very unsatisfactory. Clinically some cases were recognised as cases of typhoid fever, others as malarial, the remainder were apt to be described as mixed infections and named typho-malarial. The wider employment of laboratory methods of diagnosis in the "nineties" of last century, following on the rise of bacteriology in the "eighties," cleared up the diagnosis of fevers in the tropics, and typhoid, malarial, and "Malta" fevers could soon be exactly and certainly recognised. The cases that remained doubtful were those which proved on investigation to be neither typhoid fever nor malaria, so the term "typho-malarial" became discredited. It still lingers on in out-of-the-way places, and Dr. Otto Schneider, of the Bagdad Railway, has recently found the name employed in Asia Minor, and has proved that it has there been given to cases of relapsing fever. In Cilicia and Northern Syria he found many cases of fever which if slight were said to be malarial, but if severe were called typho-malarial. These severer cases, more common in the cooler months, showed spirochætæ Obermeieri in their blood films, and were due to infection by the bite of a tick which lives in the ground or floor and specially attacks those natives who have no beds to sleep on. "More even than itch," says Dr. Schneider, "is this a disease due to a man's sleeping quarters."[1] The incubation period is eight days. Spirilla are sparingly found in the blood on the second day of the fever. They disappear 12 hours before the crisis. It is a disease particularly of the cooler months; in the heat of summer malarial (tropical tertian) infections are more common. In 52 cases which were minutely investigated ten were found to have concurrent malarial infection. Clinically the mixed infections presented the appearance of severe attacks of relapsing fever, but the malarial infection superadded an increased prostration and marked benumbing of the senses. Salvarsan cured these cases, but was expensive; the author got excellent results from intravenous injections of ¼ grain of arrhenal, repeated twice at intervals of four days. The detailed clinical reports on these fevers will well repay perusal.[2]

I am, Sir, yours faithfully,

Dec. 14th, 1912. EXILE.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—The debacle of our profession is now a fact, and cannot be averted by any half-measures, such as are dear to the opportunist. Whatever the respective merits of service under the Insurance Act panels, and service under the British Medical Association's latest alternative, both methods re-establish contract capitation practice on a universal basis.

Considering that when the Insurance Bill was first mooted we were almost universally agreed, and rightly, that contract capitation practice was bad in principle, and should never be extended, the position we have come to is a curious one. It shows conclusively that the cardinal points, hurriedly adopted as our charter, were ill-adapted to secure either our rights or the interests of the public, because they contained no clearly defined principles on which either a fighting policy or a policy of agreement could be based.

Now, optimists and pessimists will differ as to whether our profession as a whole in this debacle will ever recover its freedom and unity again. Being an optimist by conviction, religion, and philosophy, I believe that, whatever temporary success the panel system and the latest system of the British Medical Association may respectively obtain, the real hope and strength of the future of our profession will lie in the hands of that little band of independent doctors scattered over the kingdom who are content to retain their own freedom and endure their own losses, apart from any system of capitation contract practice. We shall, at any rate, be free; we shall have sacrificed no conviction, we shall preserve and clarify our principles; and we shall begin by discarding *in toto* the so-called cardinal points, which, though they contain some true principles, are a most vague, confused, unpractical, ill-considered jumble of principle and policy; and we shall base our position on real principles only, which can be proved to be to the benefit of State, beneficiary, and doctor alike; and on which alone a perfectly sound and feasible policy can be founded, without compromise, without fear, without favour to any class, and without injustice to any class or to the State. Our principles include financial principles which have been ignored both by the State and by our leaders hitherto, but which are inseparable from sound policy. Our principles are based on human nature, and therefore approach the problem in a totally different manner from that of the *doctrinaire* politician, but on a more solid foundation, which in the long run will enlist the assent of our fellow citizens at large.

The practical "statesmen" in our Association, the politicians of both parties, and the superficial opportunists who write the leading articles in the lay press and pose as oracles of common sense, may laugh at the idea of any code of principles not immediately applicable being considered for a moment by any sane person. Nevertheless, true principles founded on human nature will always in the long run prevail; human nature and time will always surely explode unprincipled schemes and false theories; and the triumphs of opportunism never last long, in the nature of things, however submissively they be temporarily accepted by our citizens, including the medical profession. Therefore, neither ridicule, nor fear, nor the temporary insanity of politicians or of our own profession will deter free men, who intend to remain free, from analysing and clarifying those principles of action which are based on freedom and lead to a policy good for the State, for the insured, and for the medical profession in equal degree. In the unlikely event of these general views finding acceptance in any quarter I shall be glad to communicate further with anyone wishing to apply sound principles to medical practice, and in the meantime I propose to apply my principles practically in my own practice as a beginning so far as this can be done single-handed.

I am, Sir, yours faithfully,

Osmotherley, Northallerton, Jan. 4th, 1913. H. B. LUARD.

To the Editor of THE LANCET.

SIR,—May I through THE LANCET ask practitioners in each locality to adopt the following motion at any meeting:—

This meeting sanctions the going on to the panel of all doctors now threatened by having their medical practice taken from them, and their wives and children so rendered destitute, Provided that any doctor who now goes on the panel shall sign a legally stamped bond swearing that he will remain on the panel only until April 30th, 1913, and that no doctor will after that date accept or continue to hold any position under the Insurance Act until the Government agrees to a scale of fees per visit for minor operations and for all certificates. That we now establish a Local Medical Practitioners' Union for the purpose of enforcing this resolution.

I am, Sir, yours faithfully,

Liverpool, Jan. 6th, 1913. R. R. RENTOUL.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester and Salford Practitioners and the Insurance Act.

IN Salford the medical men have come to a temporary arrangement until April 30th with the Salford Insurance Committee. The terms of agreement are as follows:—

The Committee undertake that the total sums available for medical attendance and treatment—namely, a quarter's portion of the annual 6*s.* 6*d.* per head for each insured person and 6*d.* per head for domiciliary treatment of insured persons suffering from tuberculosis, shall be distributed among the doctors giving the medical treatment and attendance to insured persons in accordance with a scale of fees to be settled by the representative committee of those doctors, or shall be handed to the committee of those doctors, to be by them distributed among the doctors in that way.

The amount available shall be the total amount for which the Committee shall be responsible to the doctors, and each doctor must give an undertaking that he will not make any claim against either the Committee or an insured person for higher remuneration or bring any action with respect of it. If the total amount is insufficient to meet all the charges of the doctors in accordance with the scale there shall be a *pro rata* reduction in the charges. The doctors must make an arrangement among themselves by which every insured person in the area shall receive adequate medical treatment and attendance.

[1] Archiv für Schiffs- und Tropen-hygiene, 1912, p. 150.
[2] Ibid.

The sum of 2s. per head for each insured person available for drugs and medical appliances shall in like manner be ascertained for each area, and so much of it as is assignable to the doctors for supplying drugs and medical appliances shall be distributable among them according to the scheme to be settled by the before-mentioned representative committee, and the remainder of the fund shall be distributed in accordance with Regulations 43 and 45.

Each doctor shall undertake to give to the persons attended by him such certificates as are necessary to enable them to establish their claim for sickness and disablement benefit, and to keep a day-book in the form already settled by the Commissioners and provided by the Committee. Disputes to be referred to the Medical Service Subcommittee described in the Regulations, and doctors' names to be published in the first list, and their consent to this publication is to indicate their acquiescence in the arrangements above described.

After deliberations which lasted until near midnight on Jan. 6th, a provisional arrangement was reached between the Manchester Insurance Committee and the local medical men. In many respects the arrangement is similar to that arrived at in Salford. It may form the basis of similar settlements between Insurance Committees and medical men in other parts of the county. The scheme is a tentative one for the quarter commencing Jan. 15th, 1913.

Hospitals and the Act.

The board of management of the Salford Royal Hospital, after a conference with the medical board, has resolved that, so far as its resources permit, the hospital will endeavour in every way to facilitate the successful working of the Insurance Act, and to insure that the necessitous sick poor of Salford and the district should continue to receive medical treatment in all cases not otherwise provided for under the Act.—The board of management of the Wigan Infirmary has decided that the Insurance Act shall make no change as regards the treatment of patients. Last year 48,000 outdoor patients were treated at the infirmary, and the working men and women contribute £8000 annually to the institution in weekly penny levies.

A Year's Inquests.

The Manchester city coroner, Dr. E. A. Gibson, has just issued his annual report. The number of sudden deaths reported was 1363—an increase of 41 over last year. In 415 cases no inquest was deemed necessary. The number of inquests held was 943—an increase of 33 on last year. Accidents accounted for 372 deaths, the number of motor fatalities was 19 as against 20 in the previous year, while 8 fatal cases were due to trams. The number of "Natural causes" verdicts was 350, while the verdict of "Suicide while insane" was returned in the case of 32 males and 10 females. The "Felo-de-se" verdict was returned in the case of 24 males and 5 females. "Excessive drinking" was the cause of 61 deaths, 36 being males. The total number of inquests on children under 10 years of age was 323. It would appear that as regards fatalities in the streets from tram, motor, or cart, the principal danger is from slow and not from fast traffic—i.e., traffic moving at the rate of 8 to 10 miles an hour. A decrease of 20 per cent. in deaths from burning is noted, but it is not possible to say whether this is due to increased use of fireguards.

Jan. 7th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

The National Insurance Act.

IT is now certain that a sufficient number of medical practitioners will go on the panels to serve the needs of the insured persons in every Welsh county. There seemed at one time a possibility that in the county of Radnor, where the population is small and sparsely scattered, no local service would be forthcoming, but after a visit from the medical officer of the Welsh Commission it was decided by the practitioners in the county to take service under the Act.

Abertillery School Clinic.

THE Abertillery local education authority was the first body in Monmouthshire and Wales to establish a school clinic. The reports by the school medical officer, Dr. A. E. Remmett Weaver, of the work which has been carried on in the clinic during the past three years have more than justified the enterprise of the authority in founding it, and have simplified Dr. Weaver's task in obtaining sanction to an extension of the facilities at present available. There are three districts, where nearly 2000 children are in attendance, which cannot be served by the existing clinic, and it has been decided to establish for these districts a second clinic at an estimated initial cost of £100 and an annual cost (including rental £30) of £70. The provision of an X ray apparatus available for the whole district, which was recommended by Dr. Weaver, has been deferred for the present. A second school nurse is also to be appointed. Hitherto a certain amount of dental work has been carried out for the school children free of charge by two local dentists, but this voluntary and unorganised treatment has not sufficiently met the needs of the district. A dentist is therefore about to be appointed at an annual salary of £150 who will undertake school dentistry in the mornings only. It is proposed that he shall conduct, under the supervision of the school medical officer, special school examinations of the children's mouths and teeth and carry out the treatment of selected children in dental rooms at the two clinics. In a recent report by Dr. Weaver he demonstrates the need for this regulated dental treatment when he states that of 250 children who had been found to have such bad mouths that their parents had been urged to obtain dental treatment, it was discovered on reinspection that only 1 child had had her mouth put into a really good condition; 10 had seen a dentist but had received no treatment; 41 had had some extractions, while 80 per cent. had had absolutely nothing at all done.

Crickhowell Rural District.

The insanitary condition of certain parts of the Crickhowell rural district in Brecknockshire has been the subject of comment upon several occasions. The sewage outfall works of the Brynmawr urban district are in the Crickhowell district, and allegations have constantly been made that the water-supplies of the latter have been polluted from these works. The financial difficulties connected with sanitary improvements in rural districts were well illustrated during an inquiry recently held in one of the Crickhowell parishes by Dr. Morgan J. Rees, one of the medical inspectors of the Local Government Board. The inquiry was primarily concerned with the question of the removal of house refuse by the district council, the Local Government Board being empowered under Section 42 of the Public Health Act, 1875, to require such collection to be made. It transpired during the course of the inquiry that the parishes concerned were already committed to a capital outlay of £10,000 on schools and water-supplies and that the rates were 9*s.* 4*d.* in the £. Suggested schemes of refuse collection might raise them to 11*s.*

Death of Mr. John Evans, of Swansea.

The medical profession of Swansea and of the surrounding district has sustained a severe loss through the death of Mr. John Evans, which took place, after a long illness, on Jan. 3rd. A native of Cardiganshire, he was born in 1844, and having obtained his medical education at the University of Glasgow, and acted for a short time as a ship's surgeon, he started practice in Swansea in 1874. He was a keen politician and an ardent supporter of the present Government, entering into the public life of the town with much enthusiasm. As a member of the School Board he assisted in developing the educational institutions in the town, and was a strong advocate of unsectarian teaching in the Board schools. He was on the commission of the peace for the borough of Swansea. His wife predeceased him, and he is survived by three daughters and two sons, one of the latter being a member of the medical profession.

Jan. 7th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The University of Edinburgh.

THE annual report of the University for 1912 shows that during the year the total number of matriculated students (including 572 women) was 3404. Of these, 1330 (including six women) were enrolled in the Faculty of Medicine. Of the students of medicine, 591, or over 44 per cent., belonged to Scotland; 228, or over 17 per cent., were from England and Wales; 95 from Ireland; 102 from India; 265, or 20 per cent., from British colonies; and 49 from foreign countries. The degrees conferred during 1912 included:

Bachelor of Medicine and Master in Surgery, 2; Bachelor of Medicine and Bachelor of Surgery, 201; and Doctor of Medicine, 55. The Diploma in Tropical Medicine and Hygiene was conferred on 1 candidate, and the Diploma in Psychiatry on 4 candidates.

Aberdeen Medical Men and the National Insurance Act.

At a meeting held on Dec. 28th the Aberdeen medical practitioners decided to work the Act by a majority of 15. The meeting was representative of both town and county. About 100 medical men were present; only 79, however, voted, 47 in favour of working the Act and 32 against. Since this decision was come to applications for enrolment on the panels have come in rapidly, the full figures in connexion with the city and county of Aberdeen being: City, 55; county, 79.—Prior to this meeting the staff of the Aberdeen Royal Infirmary had taken up the position that in the circumstances then attaching to the relation of the profession at large to the Insurance Act, insured persons being entitled to medical benefit under the Act should not be treated in the out-patient department of the infirmary except in cases of accident or urgency, and in suitable consultation cases. At a special meeting of the board of directors of the infirmary on Jan. 2nd the position, in view of the Act coming into force on Jan. 15th, was considered. After full consideration, and in order to allow of reasonable time for the provisions of the Act to be got into working order, and experience to be gained as to the working of the infirmary in connexion therewith, the directors felt it to be their duty in the meantime to continue the administration of the infirmary practically on the present lines. They resolved accordingly, and also that the whole position be reconsidered as soon as a reasonable experience on the above lines had been obtained. This decision the staff cordially agreed to.—On Jan. 3rd, at a largely attended meeting of medical practitioners in Aberdeen city area, the Local Medical Committee for the city district in connexion with the working of the Insurance Act was formed, the following committee of 15 being appointed: Professor John Marnoch (representing the University), Dr. H. M. W. Gray and Dr. F. K. Smith (representing consultants), Dr. George Williamson, Dr. T. Fraser, Dr. A. Ogston, jun., Dr. L. Sandeman, Dr. J. R. Lerack, Dr. J. Ellis Milne, Dr. J. D. Wyness, Dr. C. Forbes, Dr. J. M. McQueen, Dr. P. Howie, Dr. A. Presslie, and Dr. D. W. Geddie (representing practitioners).

Position with Regard to the National Insurance Act in the North of Scotland.

The Banffshire and Fifeshire doctors have decided to work the Act. A practitioner in Portsoy is the exception in Banffshire, where all the other doctors have decided to go on the panel. In Inverness the local doctors willing to go on the panel are unanimously of opinion that payment should be on the capitation system. In Caithness the doctors have been assured by Mr. Leishman that an additional grant for mileage was practically assured. The doctors have unanimously agreed to work the Act for one year. A Local Medical Committee has been appointed. There are stated to be 4200 insured persons in Caithness. The county is very sparsely populated. A protest by the chemists against doctors dispensing in any part of the county is being forwarded to the Insurance Commissioners; an exception is made in the case of Canisby, where it is felt the conditions are exceptional. In Orkney it will be necessary that the usual procedure shall be modified. Orkney doctors are frequently called to patients 14 or 15 miles distant, or to cross sounds and firths, so that often a single hire of a vehicle or boat to make a visit would involve an outlay of more than the annual sum payable in respect of an insured person.

Death of Dr. W. D. Macfarlane.

By the death of Dr. William Dove Macfarlane Glasgow and the West of Scotland have lost one of the oldest and most respected medical practitioners. Dr. Macfarlane was for 38 years in practice as a physician and surgeon in Busby and district, but for the last few years of his life he had lived in retirement at the house of his son, Dr. W. D. Macfarlane, of Glasgow. Born in 1843 and educated at Glasgow and Aberdeen Universities and Anderson's College, Dr. Macfarlane began his professional career at Busby as the successor of the late Dr. Ross. From the outset his professional skill and practical sagacity, combined with his kindly and genial manner, his sterling character, and his interest in every scheme which had for its object the betterment of the people among whom he lived, earned for him many lifelong friendships. Dr. Macfarlane travelled much abroad in intervals of leisure. He was broad and tolerant in his views, which he founded upon wide reading and close observation, and, spending a strenuous life in the service of rich and poor alike throughout a wide district, he was the type of all that is best in the family physician. He took a keen interest in Church affairs, and was for many years an elder in the West United Free Church at Busby. He retired from practice about seven years ago, and on that occasion he and his son, who then acted as his assistant, were made the recipients of handsome testimonials at a public meeting of the residents. Socially and professionally Dr. Macfarlane was held in affectionate regard by a large circle of friends, to whom his loss will come with profound sorrow.

Ayr Infant Health Visitors' Association.

At the annual meeting of this association Provost Mitchell, of Ayr, said that many Acts of Parliament were disappointing when they came to be administered; they failed to produce the good effect they were intended to have; but the Notification of Births Act was not in that category. It had been adopted in Ayr two years ago, and it had proved a benefit chiefly because the officials had been helped in their difficult work by the members of the Infant Health Visitors' Association. During the year 138 notifications of births had been made. Of the 138 babies only 6 had died, the deaths being due to pulmonary disease. Of the 159 babies mentioned in the previous report, 120 had attained the age of one year, 20 had removed out of the town or been lost sight of, and 19 died. Natural feeding was always encouraged; the percentage of deaths of babies naturally fed was much less than of babies artificially fed. A subcommittee took charge of the work of providing cradles, and by their efforts 60 cradles had been made from banana crates, and sold to the mothers at the price of 1*s.* 6*d.* each. Garments were also distributed for the children, and 1717 dinners were given to mothers during the year for 1*d.* per dinner, except in cases of grave necessity, when the dinners were given free.

New Infirmary at Arbroath.

The estimates in connexion with the proposed new infirmary at Arbroath have exceeded by £2500 the sum of £12,000, which was the figure calculated upon. Mr. Alexander Balfour, of Inchock, has generously come to the rescue with the promise of £1000, and a committee has been appointed to try to raise the further deficit. This estimate does not include the extra furnishings which will be required over and above that available from the former building, and in this case also Mr. Balfour has promised to help to a considerable extent.

Death of Orkney Medical Officer.

At Westray, Orkney, on Jan. 3rd, the death occurred of Dr. A. B. M. Gunn, medical officer for the island. He was a native of Caithness, but had been resident in Orkney for many years. At one time he was medical officer at Shapinsay.

Jan. 7th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Medical Profession and the Friendly Societies.

IT is generally felt that in view of the altered position of the profession to the National Insurance Act and the Friendly Societies in England, some alteration of the professional programme in Ireland is required. The demands made by the medical profession from the Friendly Societies in Ireland were identical with those made from the Government in Great Britain. In no case have the societies agreed to satisfy these demands, and several of the smaller societies have already broken up in face of them. The matter was before the last meeting of the Conjoint Committee, the central body representing the medical profession in Ireland, and it was decided that a meeting of delegates representing all parts of the country should be held in February, when the entire programme should come up for review. In the meantime the Conjoint Committee is willing that Local Medical Committees should make provisional

arrangements with societies up to March 31st on the old or on improved terms. Interpreting the grace thus given by the Conjoint Committees in somewhat liberal fashion, the Dublin County Borough Local Medical Committee last week made a provisional arrangement with the Dublin Friendly Societies' Union, pending the extension of the medical benefit to Ireland. As the result of several conferences, the following terms were agreed on:—1. Approved Societies: A capitation grant of 7*s.* 6*d.*, inclusive of drugs, for a member, his wife and family, the medical men supplying State and other medical certificates. 2. Benefit Societies, not State Approved: A capitation grant of 6*s.*, to include drugs and certificates for the payment of sick benefits, but certificates required for State Insurance purposes to be paid for extra. Special arrangements were made regarding juveniles and females who are not the wives of insured members. A sidelight upon the effects of the Act was thrown in a recent speech by Mr. J. W. Richardson, the head of great spinning mills at Bessbrook, co. Armagh. Before the Act was passed, he said, the Bessbrook firm had a private dispensary of their own—doctor, nurse, and medicine—which cost in all about £400 a year. Every worker, together with his or her family, in the employment of the firm obtained prompt attendance without difficulty. Now all that was swept away, and the firm had to pay about £1100 a year in taxes and the workpeople £400 per annum, or £1500 in all, and for this treble expense the workpeople received no medical benefits—since these had not been extended to Ireland—and must, if they wanted more attendance than a hard-worked dispensary doctor and nurse could give them, pay for it themselves in addition.

The Maternity Benefit.

The maternity hospitals of Dublin had just cause for anxiety in the phrasing of the clauses of the National Insurance Act concerning maternity benefit. Dublin is in the peculiar position of having three large maternity hospitals which, by making full use of medical students and pupil midwives, are able to place at the service of every poor woman in or near the city the best available advice. Nearly half the births in the Dublin metropolitan area are attended by one or other of these maternity hospitals. On the passing of the Bill into law it was feared that the extern departments of these charities might be destroyed, since every woman, in order to qualify for the maternity benefit, has to choose a qualified practitioner or a recognised midwife to attend her. Again, it was not clear from the terms of the Act whether a woman who became an inmate of a hospital for her confinement was entitled to the benefit or not. The hospitals made strong representations to the Commissioners on these points, and a few days ago they were informed that the Regulations about to be issued would safeguard their interests and prevent any interference with the education of medical students and midwives. Women will not lose any of the benefit by entering hospital, unless some arrangement has been made by the Friendly Society or Insurance Committee to pay a proportion of the benefit to the hospital. In such case, the balance will be paid to the husband or herself. Again, in the case of patients attended by the extern department of the maternity, the Regulations will not prohibit the payment of the full benefit. The maternity hospitals are to be congratulated on having escaped what at one time appeared to be a hardly avoidable danger.

The Health of Belfast.

From the report presented by the medical officer of health to the city corporation of Belfast on Jan. 1st it appears that during the year 1912 there were 911 cases of scarlet fever notified, 240 of diphtheria, and 192 of erysipelas—that is, these, with the other cases of infectious disease notified (typhoid, typhus, simple fever, puerperal and membranous croup), bring the number of notifications of infectious disease up to 1421 for 1912; and, of course, whooping-cough and measles are not included. For 1912 the death-rate from all causes was 18·0 per 1000, 1·6 for zymotic disease, and 2·1 for phthisis (the same for the previous three years). The infantile mortality during the 50 weeks ended Dec. 14th, 1912, was 126, as compared with 128 in 1911, 143 in 1910, 135 in 1909, and 147 in 1908. In 1884 the rate was the same as in 1912.

Inspection of the Belfast Milk-supply.

The action of the Local Government Board in refusing to grant an order to the city council of Belfast (under Section 19 of the Tuberculosis Prevention (Ireland) Act, 1908) to inspect the sources of supply in 18 rural districts from which milk is, or has been, supplied to the city, but mildly suggesting that it would be wiser for these rural councils to consent to inspection, has naturally checked progress in providing a pure milk-supply to the largest city in Ireland; for the rural councils will never voluntarily consent. As an example, at the monthly meeting of the Lurgan rural council, held on Jan. 2nd a resolution was passed refusing to allow the Belfast inspectors to inspect the dairies in the district.

Jan. 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A New Society.

A NEW society, the Société pour l'Étude des Questions rélatives à l'Amélioration des Générations à Venir—in other words, a Eugenics Society—was founded at the Paris Faculty of Medicine on Dec. 23rd. Besides medical men there were present professors of the Sorbonne and representatives of the Museum, the Faculty of Law, Parliament, and the Polytechnic. M. Perrier, director of the museum, presided. The special objects of study by the society will be heredity and selection in their application to the human race, the influence of environment, of economic conditions, of legislation and morals on the value of successive generations as regards their physical, intellectual, and social aptitudes. M. Doumer, M. Pinard, and M. Landouzy were among the speakers. Dr. Apert then read the proposed constitution of the new society, which awaits confirmation by an organising assembly to which all foundation members—those who shall have previously sent in their application to Dr. Apert—will be summoned.

Delayed Death from Local Asphyxia.

M. Amblard and M. Morel recently drew the attention of the Société de Biologie to this subject. They called attention to the fact that the absence or the insufficiency of oxygen in the blood determines the appearance of symptoms known as asphyxia. Side by side with these immediate accidents, now well known and entailing speedy death, they have observed in certain experimental conditions hitherto undescribed accidents of tardy development and entailing death later. By bringing about in rabbits, by means of a rubber tube, a constriction immediately above the lower limbs sufficiently powerful to impede the circulation, they have shown that if the compression does not exceed 30 minutes the rabbit rapidly recovers and is restored to its former condition in about a month; but if the constriction is of longer duration the animal is nearly always doomed to a slow death (the authors have noted death after 80 days), accompanied by great emaciation. If the compression exceeds an hour the animal dies in 24, or even 12, hours after convulsions. Owing to the rapidity of death in these cases emaciation is not noted. These accidents of long duration demand the attention of surgeons and anæsthetists. The elastic circular compression of a limb, in view of the hæmostasis it causes (for instance, compression of the femoral artery in surgical operations on the thigh), necessarily occasions a certain amount of local asphyxia, the consequences of which it would be interesting to follow up. Anæsthetists, moreover, admit that narcosis does not take place without a certain amount of general asphyxia. It would be of interest, therefore, to determine which among the delayed effects of general anæsthesia are attributable to asphyxia.

A New Hospital.

A competition has been opened among French architects for plans for a national institution to be named the Dufresne-Sommellier, to be erected in the commune of La Tour (Haute Savoie). Prizes of 10,000, 8000, 6000, and two of 3000 francs will be allotted to the designs in order of merit. The institution must contain, besides accommodation for the *personnel*, 350 beds, distributed as follows: 30 beds for medical cases, 10 for surgical and maternity cases, 150 for infirm old people and incurables, 100 for imbeciles and epileptics, 50 for defective children, and 10 for contagious diseases.

The Mode of Action of Ferments.

M. Daniel Berthelot read before the Academy of Medicine

on Dec. 24th an interesting communication on the mode of action of diastases or organic ferments, a subject at present wrapped in obscurity. It is known that pepsin, pancreatin, and trypsin possess the property of hydrolysing albuminoids with which they come into contact, with the character, common to all ferments, of acting in minimal doses and without losing weight in the operation. They set in action certain chemical dissociations without appearing themselves to take any direct part in them. M. Berthelot explains these facts by comparing them with the results obtained by him by means of the ultra-violet rays. In a series of experiments he was able to bring about in albuminoid matter enclosed in rock crystal capsules and exposed to the rays, changes apparently the same as those observed to follow the action of ferments. The two sets of phenomena appear, therefore, to be of the same order and to consist in the transmission to organic matter of a special vibratory rhythm.

The Contagion of Typhoid Fever Conveyed by the Hands.

Dr. Rondet, of Neuville, presented to the Academy of Medicine on Dec. 31st a report on the methods of propagation of typhoid fever. From an experience of 45 years, M. Rondet, who has observed numerous cases of typhoid fever in the country, thinks that the dangers of impure water, of well contamination, and of inundations, have been greatly exaggerated. In his opinion the conveyance of germs is principally effected by the hands of patients recently recovered from the disease, and who are still voiding the bacilli in their stools. If the hands are not washed after each passage they deposit the microbes on everything they touch, and if such patients are called on by their occupation to handle foodstuffs, as in the case of cooks, milkmen, waiters, butchers, grocers, bakers, and so forth, the spread of the disease may reach an incredible extent. M. Rondet, recalling the fact that typhoid fever (the disease of filthy hands, as it was formerly called) claims yearly in France from 6000 to 10,000 victims, hoped that this view might become more widely spread among the public, as it would result in a great diminution in the disease. He urged that explanatory circulars should be posted in all public places, when they would lead to useful results, and further, that a dictation exercise on this subject should be set once a year in all the public schools.

Jan. 6th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

A Case of Hydrophobia in Vienna.

FATAL cases of hydrophobia are exceedingly rare in this city owing to the very strict regulations as regards the keeping and control of dogs. A stray dog is generally caught within 24 hours and is invariably killed. Men are engaged for this work by the Board of Health, and even valuable dogs caught by them are never preserved. Quite a sensation has, therefore, been created on its becoming known that a man died recently from rabies in a hospital. He was bitten on his right thumb by a dog four weeks ago, but neglected to ask for medical relief. When after a fortnight he was induced by his relatives to seek advice at a hospital his possible condition was recognised by his symptoms and he was told that he would have to attend every day for two weeks in order to have the injections administered, but this he refused to do, and was lost sight of until he was brought again into the hospital in a hopeless condition and soon died. The administrative board of the hospital has been severely criticised for having on the first occasion permitted the man to go away without having the absolute necessity of appropriate treatment impressed upon him, but the hospital justly replies that it has no authority to force any form of treatment upon an unwilling patient. Altogether, over 700 persons were treated in this hospital last year for the prevention of rabies, the only fatal case being the above-mentioned patient, who had not had any antirabic treatment at all. The dog which inflicted the injury was traced, and was found to have died soon after it had bitten the man.

The Increase of Suicide.

Statistics of the cases of suicide which occurred in the course of last year in this city show that 1558 persons killed themselves here, as compared with 1406 during the previous year. It is worthy of note that the increase was mainly among females, 627 of whom took their own lives as compared with 510 during the previous year, whilst the corresponding increase among the males was only 35. This makes it seem that females are less able than males to resist bodily and mental troubles and the strain of daily life, but a sad feature of these statistics, the constant increase of suicides of children, contradicts this view. The ages at which persons committed suicide varied within wide limits, the oldest of the victims being 88 years of age and the youngest only 9 years. The unstable condition of the mind, which brings about such sad results, must be caused by some fault of modern education and general mode of living. It is a curious fact that the bright summer months are apparently more conducive to suicide than the gloomy winter days. Thus June, July, and August head the list, whilst the lowest number of suicides occurred in February and December. The modes of death most frequently selected were hanging (633 cases), shooting (233 cases), and poisoning (108 cases). Two women burnt themselves alive. The most frequently assigned motives for suicide were ill health, disappointment in love, and want of food. In 17 instances attempts at suicide were made by children who found themselves unable to accomplish their class work at school; this subject will be investigated by a special commission.

The Return of the Austrian Red Cross Missions from the Balkan War.

The Austrian surgeons who had been sent by the Red Cross Society to Bulgarian hospitals, as well as those from Servia and Montenegro, have recently finished their work and have returned here. They have given very valuable assistance, full details of which will be published shortly. The Cholera Commission which was sent to the seat of war at the request of the Bulgarian Government has also returned to Vienna. Dr. Tinter, one of the members of this commission, has published some notes of his experiences. He suggested to the King of Bulgaria the necessity of an international committee for dealing with the diseases which break out during the progress of a war, and proposed that the operations of the Red Cross Society should be extended so as to include epidemics of this kind as well as the surgical treatment of the wounded. This proposal was most favourably received, and the King promised to give special encouragement to all endeavours to promote this idea. The necessity for dealing successfully with epidemic diseases like cholera, dysentery, or small-pox has been only too well illustrated by the present war, in which sanitary, prophylactic, and therapeutic precautions were found to be sadly deficient, and it is very probable that no army, either in Europe or elsewhere, is at present completely up to date in this respect. Another point of interest has been brought into public prominence by the experiences of the surgeons—namely, that in time of war numerous persons desirous of rendering help flock to the surgical hospitals, especially women, who want to be employed as nurses. These well-meant efforts cannot be other than a hindrance to a quick fulfilment of the duties which are so pressing, and these ladies were generally offended when their services were utilised in matters of minor importance instead of in actual nursing. In a paper published recently Dr. von Frisch, the head of the Austrian-German expedition, advised the distribution of voluntary helpers in such a way that each 100 beds should be attended by from 6 to 10 trained nurses, with about 15 helpers. This would do away with a misunderstanding so common at the outset of the war—namely, that a completely untrained woman, if she only be a willing worker, can undertake the duties of a nurse.

Jan. 6th.

ROYAL LONDON OPHTHALMIC HOSPITAL.—The seventh annual dinner of the past and present students of the hospital will take place at the Imperial Restaurant, Regent-street, W., on Thursday, Jan. 23rd, at 7.45 for 8 o'clock, Dr. W. A. Brailey in the chair. Each student is entitled to introduce two guests. Tickets (price 10*s.* 6*d.* each, exclusive of wine) may be had on application to either of the honorary secretaries, Mr. Arnold Lawson, 12, Harley-street, W., and Mr. J. Herbert Parsons, 54, Queen Anne-street, W.

THE NATIONAL INSURANCE ACT.

RECENT EVENTS.

THE daily papers have recorded with punctuality and fulness the various developments of the situation in which the medical profession finds itself upon the eve of the coming into force of the administration of medical benefits under the National Insurance Act. The decisions of the various districts with regard to coöperation in their administration, both as originally arrived at and in many cases as later modified, have been recorded, and it is well known that, while a sufficient number of practitioners has been obtained to fill the panels in the majority of localities, medical service has in many cases been obtained under what the practitioners have felt to be an overbearing use of official power.

At the beginning of the year, while divided views as to the extent to which the pledge, given by the great majority of the medical profession both within and without the British Medical Association, remained valid, considerable hope was experienced that a way out of the situation, which all practitioners could accept, might be found in Section 15, Subsection 3, of the Act, which provides for the cases of insured persons who desire to "make their own arrangements" with regard to medical attendance. It was believed by some that the Act would permit of a system of contracting out, whereby the insured would be able to obtain medical service from the practitioners of their choice, upon terms that would meet with the approval of the British Medical Association. But the Insurance Commissioners, in an explanatory statement as to medical benefit, laid it down as a fact that only certain particular arrangements were contemplated by the section, and that such arrangements had no relation to any circumstances which might arise in any given area where there were not enough practitioners to secure adequate medical service for that area. This statement, the known willingness of a certain number of practitioners to work the Act, and the belief that the panels being closed by a certain date might entail some form of whole-time service upon the districts where they were incomplete, exercised, when taken together, heavy pressure upon many practitioners, who began to join the panels late last week, an example which has since been widely, though reluctantly, followed. In London and in a few other districts in the country resistance is still organised and strong, while in some places where the panels have been joined, terms agreeable to the British Medical Association have been obtained, and in one place a revulsion of feeling has led to failure in the formation of a panel which had already been filled.

MR. LLOYD GEORGE'S SPEECH.

On Friday, Jan. 3rd, after THE LANCET had gone to press, an official account of Mr. Lloyd George's speech made to the Advisory Committee of the Insurance Commissioners at the Civil Service Commission's offices was published. This address or statement was eagerly awaited, as explanatory of the course proposed to be taken by the Government to provide medical benefit in the event of panels not being satisfactorily formed to work the Act. The Chancellor of the Exchequer remarked that the present attitude of the profession was a tacit admission that as far at any rate as the cash terms were concerned they met the situation. The ground of controversy had shifted to an objection on the part of the doctors to lay control. He pointed to the fact that where the expenditure of public money was concerned this objection had never been raised before. Lawyers, as town clerks, as clerks of the peace, and as magistrates' clerks, submitted to it without demur, as did also the teaching profession. Even the medical profession, as medical officers of health and as hospital officials, had always recognised the necessity for lay control. Coming to the difficulty of forming panels, he said that though they were fully prepared to meet all the contingencies of inadequate, incomplete, or the entire absence of panels, they were very reluctant to put their views into force for fear of inflicting severe hardship on individuals. No one could accuse them of impatience. As to the assertion that they ought to have made their bargain with the medical profession before bringing in their Bill, he had never met during the whole 20 months of negotiation any body of medical men who claimed to have the power to enter into even a provisional bargain with the Government. His greatest difficulty had been in the conflict of interests in the profession itself. Even free choice of doctors was not equally important to all, while on the question of the separation of drugs and doctoring there was very divided opinion, and that demand was not included in their six cardinal points but was only introduced at the last moment at the Representative Meeting of Dec. 21st, although he had not the least doubt from the evidence brought before him that there were thousands of medical men who were much more affected by that than by anything in the six points.

He next referred to the alleged change of attitude of the profession at the last moment towards the control to be exercised by the Approved Societies, and detailed the history of the efforts made during the passage of the Bill to have the control removed to the Local Health Committees. Now that this had been done, he said, the British Medical Association, at the fag-end of a Saturday afternoon, in defiance of their constitution, had trampled on their cardinal points, and with hardly any debate had reversed their policy. As for the actual position, it was changing from day to day and hour to hour, and always in one direction. That morning there were adequate and sufficient panels set up for three-fourths of the insured population in the country; the whole of Scotland except Orkney and Shetland, where there were special difficulties; and the whole of Wales, with the possible exception of Radnorshire, the smallest county, which also presented special difficulties. The British Medical Association had computed that between 8000 and 10,000 doctors would be required to administer the Act for the whole country for England, Scotland, and Wales. They now had well over 8000 doctors willing to serve, and were nearly approaching the 10,000. In one-fourth of the area of Great Britain, however, it could not be declared that the panels were at present adequate. This he divided into two areas, one where the panels were incomplete, but where only a few more doctors were required to render them adequate; this represented one-eighth. In the other eighth the panels were either far from complete or entirely non-existent. So that at the present moment medical treatment was practically assured for seven-eighths of the insured population.

In regard to places where there were adequate panels, Mr. Lloyd George said that in many cases the doctors' acceptance was an experiment. He believed the difficulties they feared would be found to vanish in actual practice, but if the medical profession found that there was a nail that somehow had got through the shoe and was beginning to chafe and to irritate, and that they could not walk very well until it was attended to, let them send it up for repairs at once. They might depend on it that if they had any grievance, any complaints, if they found something chafing and making it difficult for them to work freely in the interests of their patients, they would get a fair and considerate hearing, and an examination of every point which they brought to his notice. He would guarantee that on his honour, on the honour of the Commissioners and of the Government. This applied to all the Regulations as well as to all the other terms of the contract except cash. He did not want to mislead the profession there. He could not, as Chancellor of the Exchequer, see his way to increase the burden of the taxpayer with regard to cash. As to the arrangements to be made where panels were incomplete or where there were no panels, it would be necessary to fall back on what were known as "other arrangements." He stigmatised the assumption that the insured person had an absolute indefeasible right to make arrangements apart from the Local Insurance Committee or the National Insurance Commissioners with any doctor he liked, whether he was on or off the panel, as a completely erroneous idea. That right depended entirely on the Insurance Committees, subject to the Regulations of the Commissioners. The provision as to contracting out was meant to meet the case of old works clubs or cases where the medical man did not wish to go on the panel because of a rooted prejudice against contract practice or because his practice did not lie in that direction, yet a particular workman having confidence in him did not wish to give him up as his family doctor. It was also intended to meet the case of those who preferred a certain special class of medical practitioner. But they could not allow wholesale contracting out; these provisions were inserted only to meet exceptional cases.

There were three alternative methods, he said, of dealing

with the cases of inadequate panels. 1. Where a panel was almost complete the Insurance Commissioners could close the panel and call upon the doctors on the panel to engage a sufficient number of assistants, or to take a sufficient number of partners, so that the incomplete panel might become complete. The panel would then remain closed in that area for a limited period to enable them to establish their practice among the insured class, and to make the insured class acquainted with the new doctors who came there to assist those on the panel. The Government would insist not merely on qualified men, but on thoroughly qualified men. He repudiated the idea that the doctors who had gone on the panel in certain areas were inferior men—they had made inquiries and they had found them fair examples of general practitioners in the neighbourhood. That was the first method. It would be a special contract entered into with the doctors whose names were given in. It would not be a panel system any longer. The second method also involved closing the panel. A sufficient number of men could be sent to the district where the panel was not complete to make up the necessary complement for attending the insured population, out of men who were prepared to start practice in any area where their services were required. They would start practice on their own. They would not necessarily be either assistants or partners. The period during which the panels should remain closed must depend on the bargain made with the men who placed their services at disposal. As to the question how the insured people might take this introduction of new men, this course would certainly not be adopted without the consent of the Local Insurance Committees. His own opinion was that the only prejudice the workman had was one he shared with every class of the community—that was, that he should get a good doctor. The third and last alternative was a salaried service, according to the recommendation made by the Advisory Committee at the Caxton Hall meeting three or four months ago. There was a little misconception about it. It would not be a State service, but a service under the Local Insurance Committee. It would not be a whole-time service. It was proposed that the salary should be given for attendance only on the insured persons, and that the doctor should be free to attend in private practice any other member of the family and other members of the same society, even though they were not insured persons. Mr. Lloyd George then cited the instance of what had taken place at Bradford, where the practitioners had altogether refused to form a panel, to show how this service would work. In Bradford there were 100,000 insured persons. Omitting the debatable 6*d.* for drugs, that gave at 7*s.* a head £35,000. It was proposed to engage 50 doctors at £500 a year each to attend the insured, and to be allowed to attend any member of the insured's family, charging fees at a scale to be agreed on between the Committee and the doctors, but not to attend anyone outside the insured class. There were to be also three specialist surgeons, one of them an oculist, at salaries of £1000 a year, and at the head of the entire service a consulting physician as superintendent at £1200 a year, making £29,000 in all. The remaining money was to be spent in providing 50 skilled nurses, and provision for aids to exact diagnosis. That service was not tried, because the doctors in Bradford came to terms, but in many cases he thought it would be better for the patient, and now the 31st had passed their hands were free and they would be at liberty to adopt this method where it might be called for. From the point of view of the finance of the societies this would be the best method, and it would be advantageous also from the public health point of view. He expressed the Government's determination where the doctors were obdurate in their areas and had no intention of coming in on the terms offered them, and promptly, and especially where they were engaged in a conspiracy to break down the Act, to close the panels forthwith. They would do it with the deepest regret, but the responsibility, as no doubt the loss, must be the doctors'. The Government were pledged to find medical benefit for 12 millions to 13 millions of the insured population, and would exhaust every resource at their disposal to redeem that pledge.

THE REJOINDER OF THE BRITISH MEDICAL ASSOCIATION TO MR. LLOYD GEORGE.

The British Medical Association promptly replied to Mr. Lloyd George's speech. It pointed out the Chancellor's misunderstanding of the Association's scheme when he spoke of it as an inexplicable change of front. The profession objected as much as ever to Friendly Societies' control, but there was no question of control in its scheme. It proposed to offer to insured persons a better service than the Government's, free from the latter's hampering regulations. The Approved Societies would do the administrative work, the doctors would guarantee an effective medical service under the sole control of the Medical Committee. It was doubtful whether one doctor in a hundred had joined a panel of his own free will. Economic pressure, fear of the introduction of outsiders, threats by the Government, and other means, better not further particularised, were compelling a service that would be unsatisfactory to all concerned. It asked how the public would view the Chancellor's alternative for the promised free choice of doctor, which could be quite well given where the panel was incomplete by allowing the insured to make their own arrangements. But the Government were offering the insured medical attendance through assistants, against which Mr. Lloyd George had previously spoken most strongly. Formerly it had been doubtful whether the use of assistants in the ordinary way would be allowed; now the Chancellor threatened to have whole districts worked by assistants. The Chancellor only showed his ignorance when he said that the working man if he got a good doctor did not care whether it was Dr. Smith or Dr. Brown. The working man cared more than the Chancellor imagined, and when the importation of medical men and their imposition on the working classes commenced, the Government would find themselves in difficulties of which they had little conception. The Chancellor might think his service a good thing for the profession, but the profession was not convinced. Imagine a tradesman being told that unless he sold his wares at Government prices a Government shop would be started next door to ruin him. The threats would give rise to a bitterness that would leave its mark on the Insurance Service for many a year. The Association repeated the assertion that until the Bill was on the point of introduction the profession as an organised body was not consulted, and that when the Association succeeded after several efforts in getting an interview with the Chancellor it was not afforded opportunities of seeing the Bill and making suggestions as to its form, opportunities which had been given to the representatives of Friendly Societies and other bodies. The question for the public was not whether the panels would be filled, but whether the service provided would be a good thing for the public in view of the very questionable methods by which the panels had been formed.

THE MEANING OF SECTION 15 (3).

On Jan. 1st, a blocking motion having been removed, there was a brief half-hour's debate upon the situation, in the course of which, as has been reported in our columns, Sir Philip Magnus asked the Financial Secretary to the Treasury, in the absence of the Chancellor of the Exchequer, to give a clear and definite reply whether under Section 15 (3) of the Act the Local Insurance Committee was not required to allow any insured person to have an option to make his own arrangements for receiving medical treatment, including medicine and appliances, from any medical man of his choice.

The Attorney-General, to whom the question had already been referred for an opinion, replied that Section 15 (3) did not require the Insurance Committee to allow choice of doctor to an insured person, but required the Insurance Commissioners to make regulations and authorise Insurance Committees to allow such choice.

THE PROTEST MEETING AT QUEEN'S HALL.

At the end of last week arrangements were made by the London Medical Committee for a campaign against the conditions of service laid down by the Chancellor. This committee is practically the Metropolitan Provisional Committee of the British Medical Association. A mass meeting of the medical profession in London was accordingly held at Queen's Hall on Tuesday afternoon last, at 3.30 P.M., under the chairmanship of Sir THOMAS B. CROSBY, M.D., late Lord Mayor of London. The meeting had been organised by the London Medical Committee, of which Dr. F. J. Smith is chairman of executive and Mr. Percy C. Raiment, honorary secretary. The object of the meeting was to protest against the methods adopted to coerce medical men into going on

the panels, and to call attention to the fact that free choice of doctor on the part of insured persons was imperilled. There was a large attendance of medical men and women, and the speeches were received with enthusiasm.

The CHAIRMAN, in opening the proceedings, explained that he had taken no part in previous meetings because of his former official position, which debarred him from politics. In a few dignified words he asked the speakers and the audience to avoid politics as far as possible, and to confine themselves to one single issue—an expression of feeling as to the manner in which their profession had been treated. He regretted the necessity for the resolution on the agenda paper; he would have liked to be able to propose a vote of thanks to an administration which had passed a great Act of Parliament, and he still hoped that the medical profession might be satisfied by concessions, so that willing doctors would carry out the Act.

Messages of apology for absence were next read from Sir R. Douglas Powell, Mr. T. Jenner Verrall, and Sir Alan R. Manby. Sir Douglas Powell wrote that the question was partly one for the medical profession, but mainly for the public.

Mr. E. B. TURNER then proposed the following resolution:—

That this meeting protests emphatically against the unfair methods of intimidation employed by the Chancellor of the Exchequer for the purpose of coercing medical practitioners to serve on the panels under the Insurance Act, and is convinced that these methods cannot result in a service satisfactory to the insured person.

He said that he moved this resolution with shame and humiliation that a learned profession should have to meet together for such a purpose. The Act was distasteful to the enormous majority of practitioners and would be disastrous to many. They had tried to obtain modification, but, because of political exigencies, they had failed. Mr. Turner then gave a biting account of the tactics adopted by those who were endeavouring to stampede medical men into joining the panels against their will. He stigmatised such methods as those of falsehood, bribery, and intimidation, and he concluded by declaring that a medical service so obtained could not be satisfactory to insured persons. Mr. Turner's fighting speech was received with great enthusiasm, and the applause lasted long after he had sat down.

The resolution was seconded by Mr. J. T. MACNAMARA, who recounted his own early struggles as a practitioner among the poorer classes, and appealed to the profession to stand firm and adhere loyally to their pledges. This speaker, also, condemned the methods by which the Government and those who worked with it were trying to force medical men on to the panels. He asserted that the names upon the panels had been duplicated and triplicated all over the country. He was followed by Mr. W. MCADAM ECCLES, who vigorously contested that the insured person's right to contract out was clearly laid down in the Act and Regulations, and that to controvert the promise that the insured should have free choice of doctor was the trickery of one who was forced to descend to the lowest tactics. The resolution was also supported by Mr. W. H. BURNHILL in a rousing speech, and by Mr. MONTGOMERY SMITH; and at 5 o'clock it was put to the meeting by the CHAIRMAN and declared carried unanimously. The result was greeted with loud and prolonged applause.

The meeting ended with a hearty vote of thanks to Sir Thomas Crosby for presiding, which was moved by Dr. F. J. SMITH, and passed with acclamation.

FURTHER ACTION OF THE LONDON MEDICAL COMMITTEE.

The London Medical Committee has issued a statement of the conditions upon which, it is hoped, the British Medical Association in London will attend insurance patients. The terms, which interpret the decision arrived at by the Representative Meeting in London on Dec. 21st and 23rd (see THE LANCET, Dec. 28th, p. 1839) are as follows:—

1. Free choice of doctor by the insured patient, and of patient by doctor.
2. An income limit of £104 per annum and a radius of two miles, but permission may be given by Local Medical Committees to raise the income limit to £160 per annum if in their opinion this course should be adopted in their area.
3. All arrangements to be made through the local Provisional or Public Service Medical Committees that are working this scheme.
4. A list of doctors willing to act will be drawn up for each borough council area, its publication to be left to the Public Medical Service Committee or the Local Provisional Medical Committees that are working this scheme.
5. That the arrangements made between Committee and insured persons or their agents shall be terminable by not less than three months' notice on either side.
6. Any complaints to be made in writing to the secretary of the Public Medical Service Committee, which undertakes to deal with them in a fair spirit.
7. The remuneration shall be:—A capitation payment of 6*s.* 6*d.* for ordinary attendance, and 8*s.* 6*d.* including medicines and dressings. Such capitation fee shall not include the following: Confinement; miscarriage or illness resulting therefrom within one month; vaccinations; anæsthetics; operations requiring local or general anæsthesia; dentistry; special examinations—e.g., refractions, X ray, &c.; tubercular disease while in receipt of sanatorium benefit; extra certificates and reports; examinations, court attendance, &c.; Workmen's Compensation, Employers' Liability, and other statutes.

Payments are to be made and lists corrected quarterly, and should any insured patients desire to pay on a tariff scale the fee charged per visit, whether with or without medicine, is to be 2*s.* 6*d.*

Medical News.

UNIVERSITY OF CAMBRIDGE.—At examinations for Medical and Surgical Degrees held recently the following candidates were successful:—

FIRST EXAMINATION.

Part I., Chemistry.—E. V. Beale, King's; D. C. Beaumont, Christ's W. E. L. Brown, Trinity; H. Chell, St. John's; W. L. Dandridge, Emmanuel; W. D. Doherty and A. M. Gaselee, King's; H. H. Ginsburg, Downing; R. T. S. Gwynne, Trinity; S. L. Higgs, St. John's; M. H. Jupe, Caius; W. N. Leak, B.A., Trinity; P. C. Livingsson, Jesus; A. G. F. McArthur and J. H. Naumann, King's; J. S. Need, St. John's; J. W. McK. Nicholl, Queens'; S. W. Page, Emmanuel; E. D. Spackman, Queens'; M. B. R. Swann, W. E. Vaudrey, and S. Waterworth, Caius; and W. G. Woolrich, St. John's.

Part II., Physics.—E. V. Beale, King's; W. E. L. Brown, Trinity; T. A. Collot and R. S. Corbett, Caius; W. L. Dandridge, Emmanuel; W. D. Doherty, King's; A. W. R. Don, B.A., Trinity; A. M. Gaselee and C. I. C. Gill, King's; H. H. Ginsburg, Downing; L. B. Hartley, King's; S. L. Higgs, St. John's; C. R. Hind, Pembroke; J. S. La Fontaine, Caius; W. N. Leak, B.A., Trinity; J. B. S. Lewis, Downing; R. Lumsden, Pembroke; G. Lyon Smith, Emmanuel; R. Mansell, Queens'; S. W. Page, Emmanuel; F. S. W. Raikes and G. M. Shackel, Trinity; E. D. Spackman, Queen's; M. B. R. Swann and W. E. Vaudrey, Caius; Y. S. Wan, St. John's; S. Waterworth, Caius; and W. G. Woolrich, St. John's.

Part III., Elementary Biology.—D. J. Batterham, Caius; P. J. Briggs, Christ's; E. B. Brown, Caius; G. W. Brown, Christ's; T. A. Collot and T. L. Crawhall, Caius; W. D. Doherty, King's; A. W. R. Don, B.A., and W. N. Leak, B.A., Trinity; G. T. Lipshytz and G. Lyon Smith, Emmanuel; G. S. Need, St. John's; M. B. R. Swann, Caius; and G. D. C. Tracy, Emmanuel.

SECOND EXAMINATION.

Part I., Human Anatomy and Physiology.—C. G. Ainsworth, B.A., Downing; E. H. R. Altounyan, Emmanuel; J. Aydon, B.A., and B. F. Bailey, B.A., Clare; O. A. Beaumont, B.A., Christ's; S. L. Bhatia, Peterhouse; W. K. Bigger, B.A., Emmanuel; A. B. Bratton, B.A., and F. V. Cant, Caius; H. Chadwick, Trinity; V. M. Coates, B.A., Caius; A. O. Courtis, B.A., Pembroke; D. Crellin, B.A., St. John's; C. S. Dodson, B.A., Queens'; J. S. Ellis, Trinity; J. S. Eloff, Trinity Hall; E. T. D. Fletcher, B.A., Magdalen; C. Gardiner-Hill, Pembroke; C. B. Hawthorne, Clare; R. C. Hewitt, Caius; E. P. Hicks, Trinity; L. G. Jacob, B.A., Christ's; L. W. Jones, Emmanuel; C. E. Kindersley, B.A., Magdalen; J. B. Leather, B.A., and F. G. Lewtas, Caius; M. L. Loveless, B.A., and W. B. Loveless, B.A., Pembroke; H. D. McIlroy, Jesus; E. O. Morrison, Caius; B. Mountain, M.A., Sidney Sussex; E. G. D. Murray, B.A., F. P. Nicholas, B.A., Jesus; K. Playfair, B.A., Caius; R. T. Raine, B.A., H. Selwyn; W. F. R. Schloss, Trinity; E. P. W. Wedd, B.A., Caius; W. L. Willett, Trinity; A. G. P. Wills, Corpus Christi; C. B. Wilson, Pembroke; W. R. Wilson, B.A., Emmanuel; G. W. Woodhouse, B.A., Clare; and F. H. Young, Trinity.

THIRD EXAMINATION (*Old Regulations*).

Part I., Pharmacology and General Pathology.—J. W. Adams, B.A., Caius; W. F. Bensted Smith, B.A., and J. H. Cumming, Pembroke; R. W. B. Gibson, B.A., Jesus; G. D. Sherwood, B.A., Emmanuel; G. R. S. Thomas, B.A., Downing; and R. W. Willcocks, B.A., Caius.

THIRD EXAMINATION (*New Regulations*).

Part I., Surgery and Midwifery.—K. B. Aikman, B.A., Clare; J. Brewer, B.A., Emmanuel; E. N. Butler, B.A., Clare; A. M. Humphry, B.A., Trinity; H. Y. Mansfield, B.A., Emmanuel; S. G. Platts, B.A., Caius; Fl. Roberts, B.A., Clare; D. N. Seth-Smith, B.A., Emmanuel; and W. J. F. Symons, B.A., Sidney Sussex.

Part II., Medicine, Pathology, Therapeutics, &c.—E. Wordley, B.A., Emmanuel.

UNIVERSITY OF LONDON.—At the first examination for Medical Degrees held recently the following candidates were successful:—

Girdhar Clement Agarwala, London Hospital; Guthrie Newcomb Anderson, Guy's Hospital; Kenneth Norman Grierson Bailey, St. Bartholomew's Hospital; James Reid Banks, University College; Grace Mary Beaven, London (Royal Free Hospital) School of Medicine for Women; *Herbert Frederic Gustave Berncastle and Alexander Beckett Bond, Guy's Hospital; Guy William John Bousfield, St. Thomas's Hospital and Birkbeck College; Thomas

Carlyle, Portsmouth Municipal College; Phillip Caro Leslie Carrier, Charing Cross Hospital; Octavius Cyril Carter, London Hospital; Percy Selwyn Clarke, St. Bartholomew's Hospital; Cyril George Coombs, Guy's Hospital; Robert Cecil Davenport, Mill Hill School and St. Bartholomew's Hospital; George Day, Epsom College; ††James Daniel Dyson, Middlesex Hospital; Guy Waterman Elkington, Guy's Hospital; Clarence Franklin Eminson, Epsom College; Gerald Hartas FitzGerald, Guy's Hospital; Lionel Bernard Goldschmidt, King's College; Iris Harding, London (Royal Free Hospital) School of Medicine for Women and private study; Graham William Heckles, Guy's Hospital; †William Andrew Hewitson, University of Durham; Edward Arthur Holmes, King's College; Charles Arundel Hutchinson, London Hospital; John Wilkinson Davis Hyde, University College; Jack Joffe, South African College, Cape Town, and Guy's Hospital; David Morris Jones, University College, Cardiff; Vivian Emrys Jones, University College, Bangor; Michael Harry Kirkpatrick Kane, University College; George Edwin Kidman, Guy's Hospital; Edward Eric Lightwood, Westminster Hospital and King's College; Marguerite Frances Jane Lowenfeld, London (Royal Free Hospital) School of Medicine for Women; Ethel Marion McCartney, London (Royal Free Hospital) School of Medicine for Women and Birkbeck College; Robin Gordon Mack, Highgate School and St. Bartholomew's Hospital; Templar Edward Malins, University College, Cardiff; Humphrey Ingilby Marriner, St. Thomas's Hospital; Puthiyaveethil Narayana Menon, Madras Medical College and University College; Joseph Octave Roger Montocchio, Guy's Hospital; Arthur Morford, St. Bartholomew's Hospital; Mohammed Munir, St. Thomas's Hospital; *Noel Olivier, University College and London (Royal Free Hospital) School of Medicine for Women; Irene Grace Parsons, London (Royal Free Hospital) School of Medicine for Women; Victor J. E. C. del S. Perez y Marzan, University College; Edwin Seymour Phillips, Guy's Hospital; Sybil Madeline Georgina Pratt, London (Royal Free Hospital) School of Medicine for Women; Thomas Dawson Pratt, University of Leeds; Stephen Henry de Grave Pritchard, Epsom College and private study; Charles Nathaniel Read, King's College; Joyce Baron Reed and Frances Elinor Rendel, London (Royal Free Hospital) School of Medicine for Women; Paul Rigauld Riggall, University College; Henry Bret Russell, St. Paul's School; Mandell Shimberg, St. Paul's School and London Hospital; * Ellen Sylk, London (Royal Free Hospital) School of Medicine for Women and private study; Arthur Anton Thiel, King's College and St. Bartholomew's Hospital; Norman Beattie Thomas, University College, Bangor; Kenneth Robert Traill, Guy's Hospital; Kenneth Tratman King Wallington, University College; Ralph Edwin Stuart Webb and Alfred Douglas Weeden, Middlesex Hospital; Arthur William Wells, London Hospital; Effie Adela Wharton, London (Royal Free Hospital) School of Medicine for Women; Graham Selby Wilson, Epsom College; William Frederick Pilton Wilson, private tuition; Sik To Wong, Dulwich College and Guy's Hospital; and Campbell Young, University College.

* Distinction in Biology. † Distinction in Inorganic Chemistry.
‡ Distinction in Physics.

Mr. William Lang, consulting surgeon to the Royal London Ophthalmic Hospital (Moorfields), has given a special donation of £450 to the hospital, for the endowment for three years of a clinical research scholarship.

Dr. Robert Jones, resident physician and superintendent to the Claybury Asylum and lecturer on psychological medicine to St. Bartholomew's Hospital, has been elected an Honorary Member of the Clinical Society of Mental Medicine of France.

THE Secretary of State for the Colonies has appointed Lieutenant-Colonel Sir William B. Leishman, M.B., C.M. Glasg., R.A.M.C., F.R.S., professor of pathology at the Royal Army Medical College, London, to be a member of the Advisory Medical and Sanitary Committee for Tropical Africa.

THE next holiday course of the Berlin Association of Dozenten will begin on March 3rd and will finish on April 5th, 1913 (with the exception of Good Friday and the Easter holidays). Prospectuses may be obtained gratis on application to Herr Melzer, Ziegelstrasse, 10/11 (Langenbeck-Haus), Berlin, who will also supply any further information that may be required.

LITERARY INTELLIGENCE.—Messrs. Macmillan and Co. will publish on Jan. 14th the second volume of the translation of Professor Luigi Luciani's "Human Physiology," dealing with internal secretion, digestion, excretion, and the skin.—Mr. Heinemann is publishing another volume of the Criminal Science Series, entitled "Penal Philosophy," by Gabriel Tarde.

THE Secretary of State for India has informed the Council of the Order of the Hospital of St. John of Jerusalem that he has received a telegram from the Viceroy of India expressing His Excellency's high appreciation of the services rendered by a contingent of the St. John Ambulance Brigade Overseas in connexion with the injuries caused by the bomb outrage on the occasion of the State entry into Delhi on Dec. 23rd. The Marquess of Crewe adds that he associates himself warmly in the great appreciation which Lord Hardinge has expressed of the services of the officers and members of the Brigade on that occasion.

THE EUGENICS EDUCATION SOCIETY.—This society has now removed to Kingsway House, Kingsway, London, W.C. Training courses for students of eugenics have been organised, and a conference of the heads of elementary and secondary schools and training colleges is being arranged for in March. This conference will consider the advisability of introducing eugenic ideals into all systems of education.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Medical Service in the Highlands.

THE Departmental Committee which was appointed by the Treasury to inquire into the medical service in the Highlands of Scotland has completed its work, and its report has been laid on the table of the House of Commons. Sir JOHN DEWAR, M.P., was the chairman. A scheme of far-reaching importance has been framed by the Committee. After taking evidence from the counties of Argyll, Caithness, Inverness, Ross and Cromarty, Sutherland, and Orkney and Shetland, it has come to the conclusion that the facts justify exceptional treatment in the Highlands and Islands of Scotland in respect of medical treatment. The sparseness of the population, the difficulty of communication, and the severe climatic conditions render medical attendance onerous and hazardous for the medical man and uncertain for the people. The straitened circumstances of the latter preclude adequate remuneration of medical attendance by fees alone, and the lot of the practitioners is hard. The Committee recommends a comprehensive scheme of reform.

It suggests that a nursing service should be organised in conjunction with a medical one. The supply of local nurses should be extended, and the nurse, through an organisation, made directly responsible to the medical attendant. The nursing agencies should be organised on district or county lines. Then the Committee recommends that cottage hospitals should be erected at various convenient centres. They should be of such a size as to accommodate from two to four patients with a nurse and the necessary assistance. A local dispensary should be provided for the medical man. The provision of tuberculosis hospitals, more particularly in the larger islands, should receive special consideration.

An additional Imperial subsidy is advocated by the Committee in order to provide a more satisfactory financial basis for general medical practice. For the purposes of administration a central authority and a local authority are stated to be required. The central board should consist of representatives of various Government departments and a representative of the General Medical Council. The local authority would be the district committee reinforced by representatives of the Insurance Committees and of the nursing organisation and by a medical representative. The duty of this local medical committee would be to prepare a scheme of improved medical and nursing service for submission to the central authority with a view to obtaining an Imperial grant.

In a general way the Committee expresses the opinion that for public and private medical service in single practice areas a minimum income of £300 per annum with travelling allowance should be secured to every medical practitioner recognised by the authority. In the case of several medical men living in a common centre (multiple practice area) where it would be in the public interest to arrange that outlying patients should be attended at small fees, the doctors should receive an annual subsidy to enable this to be done. These are the main outlines of an elaborate report.

Blackwater Fever in Tropical Africa.

A Parliamentary White Paper embodying the reports of medical officers on blackwater fever in the tropical African dependencies has been published. These reports were called for by the Colonial Office with a view to throw as much light as possible on the nature and causation of the disease.

HOUSE OF COMMONS.

WEDNESDAY, JAN. 1ST.

Medical Men and the Insurance Panels.

Mr. BIGLAND asked the Secretary to the Treasury whether Mr. H. G. Cowie and Mr. H. P. Orchard, honorary secretaries of the National Insurance Practitioners' Association, in a circular letter addressed to every member of the medical profession, dated Dec. 27th, were authorised by him to make the promise contained in the circular that if a panel was not formed by Jan. 31st the Insurance Committee or Commissioners would be able to adopt a whole-time service or such other arrangements as they might think fit, regardless of the practitioners of the area, and that he had promised that in such case special consideration should be given to those who had applied by Dec. 31st; and, if so, whether he would lay upon the table copies of what had passed between him and the authorities

referred to in this paragraph.—Mr. MASTERMAN replied: The paragraph in the circular letter referred to appears to state the actual fact that, if the panels are not formed in any areas, the panel system would be suspended and a whole-time service or such other arrangements would be adopted as the Insurance Committee and the Commissioners decide. In response to questions received from the National Insurance Practitioners' Association during the holidays the Chancellor of the Exchequer replied that priority of consideration would be given in the case of whole-time appointments to doctors who went on the panels, and I will lay a copy of the letter which he wrote to the Association, and which has already appeared in the public press.

The Insurance Act and Medical Practices.

Sir J. D. REES asked the Secretary to the Treasury whether he was aware that a practice for which £1200 was offered before the National Insurance Act was in sight realised one offer of £900 soon after it was passed, and was now unsaleable, and that many similar cases had occurred; that the passing of this Act had stopped the buying and selling of practices, and brought ruin to medical men all over the country, and what compensation it was proposed to give to the owners of such depreciated practices.—Mr. MASTERMAN answered: The reply to the two first parts of the question is in the negative. I am not aware that any scheme of compensation is required in connexion with an Act which will greatly increase the remuneration of those who accept service under it. There is not the slightest doubt but after a few months the doctors on the panel will find their practice worth very much more than now.

The Provision of Medical Benefit.

Sir J. D. REES asked the Secretary to the Treasury what steps the Government intended to take to provide medical benefits on and after Jan. 15th, 1913, in view of the fact that insured persons on that date had paid tax for six months on the faith of Government assurances that medical benefit would be forthcoming; and whether the Government proposed to proceed with the compulsory collection of insurance tax, notwithstanding the fact that 42 per cent. of the medical profession had formally refused service under the Act in its present form, which refusal practically made the medical benefits of the Act impossible of attainment.—Mr. MASTERMAN said in reply: Medical benefit will be provided in accordance with the National Insurance Act as from Jan. 15th, and insurance contributions will continue to be paid as required under the same Act. I do not know the honourable Member's authority for the figures given in the last part of the question, but I would point out that if, as he suggests, only 42 per cent. of the medical profession have preferred not to undertake the provision of medical benefit under the Act, the remaining 58 per cent. would be very largely in excess of the number required to give adequate medical attendance to the insured persons.

The Finance of Medical Benefits.

Mr. CASSEL asked the Prime Minister whether it was intended to obtain the sanction of the House of Commons before any arrangements were made by Insurance Committees for the provision of medical benefit which involved the payment out of public funds of amounts in excess of those hitherto sanctioned by Parliament.—Mr. MASTERMAN said in reply: My right honourable friend has asked me to answer this question. The National Insurance Act does not impose any limit upon the amount which may be expended out of contributions in the provision of medical benefit. The effect of spending more than the amount allowed in the actuarial calculations upon which the scheme is based would in the absence of a special grant be to reduce the amount available for other benefits. It is proposed to ask Parliament for a special grant to defray the expenditure which may be incurred by the Insurance Committees after the moneys actuarially available for the present calendar year have become exhausted. The agreements which are being entered into with the doctors in no case run for more than three months, and no public money will be expended without the previous sanction of Parliament.

Mr. CASSEL: Is it not the case that binding agreements will be entered into before Parliament is consulted, and what becomes of the control of this House over finance if binding agreements are entered into before the sanction of this House is obtained when that sanction could be perfectly well asked for and obtained beforehand?—Mr. MASTERMAN: No binding agreements with the doctors, involving the expenditure of public money outside that provided by the National Insurance Act, will be entered into until Parliament has voted the money, if it does vote the money.

Mr. CASSEL: Is it not the case that unless the additional money is found out of public money there will not be enough to provide for medical benefit?—Mr. MASTERMAN: I have said that agreements with the doctors are only for three months. Those agreements can be fully honoured out of the money already provided by Parliament.

The Milk Bill.

Mr. ASQUITH informed Mr. STANIER that he was not in a position to say when the second reading of the Milk Bill would be taken.

Mr. STANIER: Can the right honourable gentleman say whether it will be taken this session or not?—Mr. ASQUITH: No, I cannot say.

The Medical Inspection of School Children.

In reply to Mr. CHARLES BATHURST, Mr. J. A. PEASE (President of the Board of Education) said: The total expenditure on medical inspection and treatment of children in elementary schools in England and Wales for the financial year 1910-11 amounted to £186,999. This is the latest year for which complete returns have been received. The whole of the cost was borne by the local authorities.

THURSDAY, JAN. 2ND.

Tuberculous Cattle in Ireland.

Mr. GUINEY asked the Vice-President of the Department of Agriculture (Ireland) whether his department would take the necessary steps to ascertain the views of the county, rural, and urban councils in Ireland as to the advisability of extending to Ireland the proposals now made in England for payment for tuberculous cattle compulsorily slaughtered by order of the local authorities in Ireland.—Mr. T. W. RUSSELL replied: The question of dealing with tuberculous cattle in Ireland on lines similar to those proposed to be adopted in England by the Board of Agriculture and Fisheries is under the consideration of the department who are in communication with the Board on the subject. The department are not at present in a position to make any further statement in the matter.

Medical Benefit in Sussex.

Earl WINTERTON asked the Secretary to the Treasury what steps had been taken to secure medical attendance under the National Insurance Act for those entitled to it after Jan. 15th in the administrative county of West Sussex.—Mr. MASTERMAN wrote in reply: A conference is now taking place with members of the Insurance Committee to determine the exact arrangements for the administration of medical benefit in this area.

Mr. RUPERT GWYNNE asked the Secretary to the Treasury to state how many medical practitioners there were at present resident in the county of Sussex, and how many of them had accepted his invitation to place their names on the panels to serve under the National Health Insurance Act.—Mr. MASTERMAN (in a written answer) replied: A conference is now taking place to receive reports from Insurance Committees as to the number of medical men who have declared their intention of serving on the panels. I hope it will be possible to publish the exact figures as regards the area mentioned in a few days.

MONDAY, JAN. 6TH.

The Formation of Panels.

Mr. CASSEL asked the Secretary to the Treasury whether it was proposed to close the panels of doctors in any areas at a fixed time; and, if so, how in such cases the right of every duly qualified practitioner to have his name placed on the panel would be secured.—Mr. MASTERMAN answered: The right of a duly qualified practitioner to have his name on the panel is conditional upon an adequate medical service having been arranged in his area on the normal panel system. Where a panel cannot be formed the Insurance Commissioners may, under the proviso in Section 15 (3), authorise the Insurance Committee to make such other arrangements as the Commissioners may approve, or may themselves make such arrangements as they think fit.

Mr. CASSEL: Is the right honourable gentleman aware that Clause 15, Subsection (2) specially provides for the right of every duly qualified practitioner to go on the panel, and that in the case where no panel is formed Parliament has expressly secured him that right?—Mr. MASTERMAN: Certainly. But I said that when the Commissioners after examination find there is no adequate panel it is evident that there is no panel formed. Where they have not declared the panel to be inadequate, there is a right for every practitioner to go on.

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury whether the following statement, contained in the official explanatory statement as to medical benefit issued by the Insurance Commissioners to the doctors about Dec. 16th last, that it would at any time be possible for a doctor to indicate his willingness to act on a panel, but unless indicated by Dec. 31st the name would not be included in the first list, represented the policy of the Government; whether any warning had been given to doctors that the panel might be closed against new names for one, or two, or three years; and whether such closing was authorised by any, and which, of the existing regulations under the National Insurance Act.—Mr. MASTERMAN replied: The answer to all three parts of the question is in the affirmative, with the reservation that the right of a practitioner to be included on a panel is conditional upon a panel being formed in his area. The Chancellor of the Exchequer announced so long ago as Oct. 23rd that if no adequate panel can be formed in any area, arrangements would be made for suspending the normal panel system, and that it would then be the duty of the Insurance Commissioners under the proviso to Section 15 of the Act to provide medical benefit by authorising the Insurance Committees to make other arrangements, and by themselves making such other arrangements as they think fit, as an alternative to the suspension of medical benefit. The Regulations issued by the Commissioners are subject to the exercise by them of the powers reserved in the proviso to Section 15 (2).

Mr. WORTHINGTON EVANS: Can the Insurance Commissioners close the panels for one, two, or three years against the medical men who do not first go on the panels?—Mr. MASTERMAN: If a panel is declared by the Insurance Commissioners to be adequate—and so long as it is adequate—other doctors may have their names added to the panel. If the Insurance Commissioners declare the panel inadequate, then they can make any arrangements which they think fit for the medical treatment of insured persons.

Mr. NEWMAN asked the Secretary to the Treasury whether, in the case where a panel of medical practitioners was closed though incomplete by the Insurance Commissioners, and leave given to practitioners on such panel to engage assistants to complete the panel, he would say on whom would devolve the duty of examining into the professional capabilities of such assistants; and whether any provision would be made securing to them a minimum salary.—Mr. MASTERMAN answered: The Insurance Committees will be responsible for securing that the service in their areas is adequate if the normal panel system is in operation, or if the panel system is suspended, they are authorised to make such arrangements as they think fit subject to the approval of the Commissioners. If in the latter case the service were partly provided through partners and assistants of the original practitioners, it would therefore be the duty of the Insurance Committees to take any necessary steps to secure that the service provided by such persons is satisfactory.

Mr. NEWMAN: Who will actually examine the doctors' qualifications? The Insurance Committee?—Mr. MASTERMAN: If the work is entrusted to the Insurance Committee it will be done by them with the approval of the Insurance Commissioners, or the Commissioners may, if they like, themselves make the arrangements.

The Right to Refuse Insured Patients.

Dr. CHAPPLE asked the Secretary to the Treasury whether, in view of the statement made by the chairman at Wednesday's conference with the London doctors to the effect that no patient would be forced on any doctor, and in view of Section 15, sub-section (2) (d) of the National Insurance Act, he was prepared to state what arrangement had been made in this respect.—Mr. MASTERMAN answered: Any doctor on the panel has a preliminary right of refusing any particular insured person who applies to be placed on the list. It will be the duty of the Insurance Committee to make such arrangements as are suitable for medical benefit for any patients who are thus refused by the doctor of their first choice, and these arrangements must be as far as practicable in agreement with the doctors themselves. Insurance Committees may ask the doctors in any district to agree each to accept a proportion of insured persons who may be refused attendance by the doctors of their first choice; or the insured person may be invited to make another

choice of a doctor willing to accept him, or some other arrangement may be made by the Committee for his medical attendance and treatment.

Dr. CHAPPLE: Is it not the case that a number of insured persons might be rejected by all the doctors on the panel? What will be done with those who have been rejected? Does this subsection not contemplate that they should be distributed among the doctors?—Mr. MASTERMAN: The Insurance Committee has made the arrangement suggested by my honourable friend, and if a panel is still in that district and kept in operation, then it will be necessary to provide a doctor on the panel who would undertake the treatment of those persons.

Whole-time Appointments under the Insurance Act.

Mr. NEWMAN asked the Chancellor of the Exchequer whether it was intended that whole-time sanitary and medical appointments in the gift of the Government were in the future to be reserved for candidates who had signified their intention of accepting service under the terms of the National Insurance Act as on Dec. 31st, 1912.

Mr. F. HALL (Dulwich) asked the right honourable gentleman whether, with a view to securing the adhesion of members of the medical profession, he had undertaken that those doctors who agreed to work under the National Insurance Act should receive priority in filling medical appointments under the Act; how many such appointments would have to be created in order to attract a sufficient number of doctors; and whether he was in a position to give an undertaking which removed staff appointments from the control of the Insurance Commissioners or Insurance Committees under whom any such appointments would be held.—Mr. LLOYD GEORGE answered: These two questions apparently refer to a letter which I issued with the concurrence of the Insurance Commissioners and which has been laid on the table of the House, promising priority of consideration in connexion with whole-time appointments to medical men who had gone on the panels. Duly qualified medical practitioners had a statutory right to be included on the panels in their areas if such panels are formed. Those who are deprived of the right through the refusal of other doctors to come on panels must of necessity receive priority of consideration in connexion with any substituted system, as any not appointed would be excluded by a choice which is not their own from any opportunity of working under the National Insurance Act. The number of salaried appointments will depend upon the number of doctors required to provide medical attendance in those areas, if any, in which sufficient doctors have not accepted service under the ordinary panel system, but I would add that there are very few areas where the possibility of such arrangements exists.

Sir PHILIP MAGNUS: Will priority of consideration be given quite independently of the qualifications of the medical men?—Mr. LLOYD GEORGE: No. Certainly the qualifications will be taken into consideration.

Bradford Insurance Committee.

Mr. NEWMAN asked the Chancellor of the Exchequer whether his attention had been called to an advertisement of the Bradford Insurance Committee asking for medical men to work the National Insurance Act at salaries of from £500 to £700; and whether, under the terms of service at present specified by the National Insurance Act, he could state how many insured persons it would be necessary for a medical practitioner to have on his list to assure for himself an income of £500.—Mr. MASTERMAN answered: I have seen the advertisement referred to in the first part of the question. A doctor not doing his own dispensing would earn £500 a year in respect of 1429 insured persons, or, if the cost of drugs did not exceed 1s. 6d. a head, in respect of 1333 persons. A doctor in a country district who did his own dispensing would earn the same sum in respect of 1111 persons.

Mr. NEWMAN: Is it not a fact that the Chancellor of the Exchequer adumbrated a scheme for Bradford giving for its 100,000 insured persons 50 doctors?—Mr. MASTERMAN: Certainly. In that case each one would look after the general health of 2000 insured persons, and he is quite capable of doing so.

Independent Arrangements for Medical Treatment.

Mr. CASSEL asked the Secretary to the Treasury whether, under Section 15 of the National Insurance Act, 1911, and paragraphs 14 and 15 of the National Health Insurance (Administration of Medical Benefit Regulations, 1912), Insurance Committees had power to allow insured persons to make their own arrangements with any doctors they pleased without reference to the Insurance Commissioners; and whether, when such arrangements had been made, the Insurance Committees were bound to make to the persons who had made such arrangements the payments referred to in paragraph 15 of the said Regulations without reference to the Insurance Commissioners.—Mr. MASTERMAN replied: Insured persons cannot make their own arrangements for medical attendance and treatment unless they are allowed to do so by the Insurance Committees, and the contributions contemplated by the Regulations will be paid subject to the possibility of deductions under Regulation 14 (8). These committees in exercising their discretion will take into consideration the general interests of all the insured persons in their area or any particular part of it. The Government and the Commissioners will take such measures as will prevent any attempt to break down the system contemplated by the Act as approved by Parliament either by the substitution of a general system of private arrangements outside the control of the Insurance Committees for that system, or by the selection of a special class of picked lives affecting the ordinary average which a panel doctor has a right to anticipate in return for his remuneration; and when no panel has been declared adequate the Commissioners will make such other arrangements as they think fit, or allow the committee to make such arrangements as they approve for the medical attendance of insured persons.

Mr. CASSEL: May not the Insurance Committee allow a person to make his own arrangements, and is the committee not bound to make payment without any further reference to the Insurance Commissioners?—Mr. MASTERMAN: Not until we have declared that the general medical service is adequate.

Mr. CASSEL: May I take a specific case? Cannot the London Insurance Committee now authorise persons to make their own arrangements with their own medical men?—Mr. MASTERMAN: That depends on how far they have made satisfactory arrangements for those who do not wish to contract out of the Act.

The Collective Responsibility of the Insurance Commissioners.

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury whether the official statements purporting to be issued to the press by the Insurance Commissioners on Dec. 26th and 29th were submitted to and approved by any meeting of the Insurance Commissioners; and, if not, by whom such statements were prepared and by whose authority they were issued to the press.

Mr. RUPERT GWYNNE asked the right honourable gentleman (1) whether all the regulations, orders, special orders, and circulars issued in the name of the Insurance Commissioners were first submitted to and approved by a meeting of the Insurance Commissioners, and whether at such meetings all the Commissioners were present; (2) whether he would state when, and by whom, it was decided to permit Insurance Committees to arrange for the importation of whole-time doctors into their districts to work the National Insurance Act; if it was the Insurance Commissioners, which members were present; and was there a unanimous vote in favour of this proposal; and (3) what was the procedure of the Insurance Commissioners in carrying out their duties; did they meet at stated times after due notice of the matters they would be called upon to consider had been given to them; were detailed minutes of their proceedings kept; and were the opinions of the various Commissioners obtained on each question by vote.—Mr. MASTERMAN said in reply: I propose to answer these four questions together. The procedure of the Commissioners in carrying out their duties varies with the nature of the different matters arising to be dealt with, as does also the extent to which, as in all other Government departments, they delegate administrative work to their staff. Minutes are kept of the more formal proceedings of the Commission, and adequate records are kept of all other matters. All decisions are taken upon the collective responsibility of the Commission as a whole, and it would be impossible in any case to announce whether any divergence of opinion had been expressed in discussion by individual Commissioners before the decisions are reached, or to give details as to the preparation of the documents issued by the Commission. Such a decision as that with regard to the alternative arrangements for provision of medical benefit where a panel is not formed would only be taken after full discussion by the Commission in conjunction with the Chancellor of the Exchequer and myself as responsible to Parliament for the administration of the Act.

Professional Duties under the Insurance Act.

Sir J. D. REES asked the Secretary to the Treasury whether he was aware that the doctors of Nottingham and Nottinghamshire had made a protest against the inclusion of attendance in cases of diseases due to misconduct, miscarriages, and abortion, the administration of anæsthetics, and the performance of operations in the conditions of service under the National Insurance Act; and, if so, what action the Government proposed to take.—Mr. MASTERMAN replied: I have received certain representations on the subject. There is, however, no power under the Insurance Act to exclude such cases from medical benefit in so far as they are within the ordinary competence and skill of practitioners on the panel and can, consistently with the best interests of the patients, be properly undertaken by such practitioners.

Mr. MASTERMAN, replying to Mr. NEWMAN, said: I am assured by adequate professional advice that certainly in urban areas a doctor will be able to be properly responsible for 2000 insured persons (the majority of whom are, of course, not ill in any given year) without being debarred from any private practice he may obtain among the families of the insured, and this advice is confirmed by the experience of insurance schemes both here and abroad. It will be the duty of the Insurance Committee in each district to see that the arrangements are such as to secure that the insured persons in their district receive adequate medical attendance and treatment.

Dr. CHAPPLE asked the Secretary to the Treasury whether, in view of the statement made at a meeting of doctors in Stirlingshire, where the conditions imposed by the Insurance Commissioners had been accepted, that doctors attending insured persons requiring an anæsthetic would have to pay the fee for the anæsthetist, and of the very prevalent idea that this was the case, he would make a statement on the subject.—Mr. MASTERMAN said in reply: The conditions under which payment is made in such cases are explained in detail in the memorandum of Dec. 3rd.

Hospitals and the Insurance Act.

Mr. NEWMAN asked the Secretary to the Treasury whether, in the case of a salaried service being established by a Local Insurance Committee and consisting of ordinary medical practitioners, nurses, specialists, and superintendent, such Insurance Committee would be empowered out of public or other funds to establish and equip a hospital to receive for treatment insured persons who might be refused admission by any hospital supported by voluntary contribution.—Mr. MASTERMAN replied: I have no reason to believe that voluntary hospitals will refuse to treat cases which are outside medical benefit. The exact scope of a special medical service which might be arranged as an alternative to the ordinary panel service would be decided with reference to the requirements of the area affected.

The Friendly Societies and the Insurance Act.

Sir J. D. REES asked the Secretary to the Treasury whether the Chancellor of the Exchequer gave a pledge to the secretary to the Medical Association Alliance that the Friendly Societies should not be deprived of the right to administer their medical benefits.—Mr. MASTERMAN answered: Section 15 (4) provides for the administration of medical benefit through existing systems and institutions under conditions there defined. Promises had been made that such institutions as the Friendly Societies Medical Alliance should be entitled to apply for approval subject to such conditions as may be required, and this right is secured by the subsection referred to.

Sir J. D. REES asked the Secretary to the Treasury whether the Manchester Unity of Oddfellows had received permission from the Insurance Commissioners to make its own arrangements for medical benefit, or whether that society had entered into an agreement with the Commissioners as to the provision of medical benefit to insured persons after Jan. 15th.—Mr. MASTERMAN replied: The Manchester Unity of Oddfellows, like other societies, has entered into the normal agreement under Section 15 (6) with the Commissioners as to the amount to be paid over from the sums standing to the credit of the Society in the National Health Insurance Fund, to the Insurance Committees towards the expenditure incurred by the latter committees in providing medical benefit; but, as has been officially stated in the public press, both by the Commissioners and by the Manchester Unity of Oddfellows, no request has been received from or permission been given to this society to make its own arrangements for medical benefit.

TUESDAY, JAN. 7TH.

Inspection of Drugs under the National Insurance Act.

Mr. WHELER asked the Secretary to the Treasury whether any arrangements had yet been made for the inspection of drugs under the National Insurance Act; if so, how many inspectors had been appointed, and at what salaries, and whether those appointed were fully qualified chemists.—Mr. MASTERMAN answered: No, sir, no such appointment has been made.

Qualifications of Panel Medical Men.

Mr. F. HALL (Dulwich) asked the Secretary to the Treasury whether any qualifications with regard to age, medical reputation, and proficiency were imposed in regard to doctors whose names were placed on the panels under the National Insurance Act.—Mr. MASTERMAN replied: Under Section 15 (1) (b) of the National Insurance Act every duly qualified medical practitioner has a right to be included in a panel list if a panel is formed in his area. The power of removal, which is provided for in the same section, is conditional upon subsequent inquiry showing that the continuance of a particular practitioner would be prejudicial to the efficiency of the medical service of the insured; and in accordance with the request of the medical profession the Regulations with regard to such inquiry require careful investigation by a specially constituted central body including members of the profession.

Mr. F. HALL: Has any medical man who has sent in his name to be put on the panel been refused?—Mr. MASTERMAN: The Insurance Committees have no right to refuse the name of any medical man sent in if the panel is formed.

Mr. F. HALL: Are we to understand that medical men are to be placed on the panel whether or not they are competent to carry out their duties?—Mr. MASTERMAN: I said that every duly qualified practitioner had a right to be included on the panel. That is a decision of the House of Commons.

Mr. F. HALL: Is the right honourable gentleman aware that there are plenty of duly qualified medical practitioners whom insured persons would not be prepared to accept?—Mr. MASTERMAN: They do not need to accept such practitioners. What the honourable gentleman is criticising, is the practically unanimous decision of the House of Commons.

Operation of Sickness and Maternity Benefits.

Mr. BECK asked the Secretary to the Treasury whether notice of the illness of an insured person could under the National Insurance Act be given before January 13th, and if so, what would be the earliest date on which the insured person, if still ill, would become entitled to sickness benefit, and what was the earliest date at which an insured person could become entitled to maternity benefit under the National Insurance Act.—Mr. MASTERMAN replied: Notice of illness of an insured person can be given before Jan. 13th. If he is ill on Thursday, Jan. 9th, or is taken ill before doing any effective work on Friday, Jan. 10th, he will be entitled to sickness benefit (if he continues to be incapable of work) as from Monday, Jan. 13th, provided he has at the latter date been in insurance for 26 weeks and 26 full contributions have been paid in respect of him. An employed contributor is entitled to maternity benefit in respect of a child born after 12 midnight on Sunday, Jan. 12th, if he has been in insurance 28 weeks and if 26 full contributions have been paid.

WEDNESDAY, JAN. 8TH.

The Medical Attendance on Deposit Contributors.

Sir WILLIAM BULL asked the Secretary to the Treasury what was the number of Post Office contributors under the National Insurance Act on Jan. 1st of the present year; how many of them were of the male and how many of the female sex; how many were engaged in domestic service; whether any Post Office contributors had received sanatorium benefit; what arrangement had been made to supply this insured class with medical benefit when it became statutorily due; and what was the average amount standing to the credit of each Post Office contributor.—Mr. MASTERMAN replied: The number of deposit contributors on the date named was 480,000, including 320,000 men and 160,000 women. No distinction is made or required between persons engaged in domestic employment and those in other forms of employment. The answer to the fourth part of the question is in the affirmative. The arrangements made with doctors in each district include provision for deposit contributors without distinction between them and members of Approved Societies. I am afraid I cannot give the information asked for in the last part of the question, as it is not required for any administrative purpose and would involve a calculation based upon 480,000 separate accounts.

The Formation of Panels.

Mr. FRED HALL (Dulwich) asked the Secretary to the Treasury to state how many whole-time doctors would be required to complete the panels under the National Insurance Act; the total cost of the same; whether a special branch of the Commission would be required to direct and supervise their work; and, if so, what arrangements were proposed to be made in the matter.—Mr. MASTERMAN answered: The accession of doctors to the panels during the past few days has been so rapid as to make it impossible to state when, if at all, any opportunity for the establishment of a salaried service will occur. It is possible that such a service will be instituted in three or four districts, but no statement can be made at present.

Mr. F. HALL: If the rush of doctors to the panels has been so rapid, how does the right honourable gentleman account for so large a deficiency in the London area?—Mr. MASTERMAN: I am not aware of any deficiency in the London area.

Mr. F. HALL: Is the number of doctors in the London area sufficient to carry out the duties under the Act?—Mr. MASTERMAN: I have not examined the numbers, but I should say from what I have seen that they will be more than sufficient.

BOOKS, ETC., RECEIVED.

WOODALL, MINSHALL THOMAS AND CO., Caxton Press, Oswestry.
The Calendar of the University of Wales for the Academic Year 1912-1913. Price not stated.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT AND CO., LIMITED, London.
New Aspects of Diabetes: Pathology and Treatment. By Prof. Dr. Carl von Noorden, Professor of the First Medical Clinic, Vienna. Lectures delivered at the New York Post-Graduate Medical School. Price 6s. net

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

HUDSON, ARTHUR CYRIL, M.D., B.C. Cantab., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Royal London Ophthalmic Hospital.

LINDSAY, JAMES, M.D. Edin., M.R.C.P. Lond., has been appointed Honorary Physician to the Royal Mineral Water Hospital, Bath.

LLEWELLYN, RICHARD JONES, M.B. Lond., has been appointed Honorary Physician to the Royal Mineral Water Hospital, Bath.

MOYES, JOHN MURRAY, M.B., Ch.B. Edin., D.P.H. Leeds, has been appointed Second Assistant Physician, Crichton Royal, Dumfries.

NEWMAN, H. E., M.B., B.Ch. R.U.I., has been appointed Assistant House Physician at the Devonshire Hospital, Buxton.

ROSS, Major Sir RONALD, F.R.S., has been appointed Physician for Tropical Diseases to King's College Hospital.

THOMSON, FREDERICK GEORGE, M.D. Lond., M.R.C.P. Lond., has been appointed Honorary Physician to the Royal Mineral Water Hospital, Bath.

TISDALL, CHARLES J., M.B., Ch.B. Edin., has been appointed Third Assistant Physician, Crichton Royal, Dumfries.

TUCK, GNOH LEAN (WU LIEN TEH), M.D., B.C. Cantab., has been appointed Director and Chief Medical Officer of the North Manchurian Plague Prevention Service, with headquarters in Harbin.

WATERHOUSE, RUPERT, M.B. Lond., M.R.C.P. Lond., has been appointed Honorary Physician to the Royal Mineral Water Hospital, Bath.

WOODMAN, E. MUSGRAVE, M.S. Lond., F.R.C.S. Eng., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 21, to be attached more particularly to the Birmingham County Court.

WYARD, STANLEY, M.D., B.S. Lond., has been appointed Research Assistant in the Departments of Pathology and Bacteriology in the Medical School of the University of Leeds.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE, DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Assistant House Surgeon. Salary £90 per annum, with board, residence, and laundry.

BATH, ROYAL UNITED HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Resident Medical Officer for six months. Salary at rate of £60 per annum, with board, residence, &c.

BIRKENHEAD UNION INFIRMARY.—Senior Resident Assistant Medical Officer. Salary £120 per annum, with board, washing, and apartments.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeons, unmarried. Salary £200 per annum, with rooms, fire, light, and attendance.

BIRMINGHAM, QUEEN'S HOSPITAL.—Radiographer. Salary £100 per annum.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary £85 per annum, with board, residence, &c.

BLACKBURN, COUNTY BOROUGH EDUCATION COMMITTEE.—School Medical Inspector and Assistant Medical Officer of Health. Salary £250 per annum.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, lodging, and laundry.

BRADFORD ROYAL INFIRMARY.—Resident Surgical Officer, unmarried. Salary £150 per annum, with board and residence.

BRENTFORD UNION INFIRMARY, WORKHOUSE, AND SCHOOLS.—Second Assistant Medical Superintendent, unmarried. Salary £125 per annum, with apartments, rations, &c.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for five months. Salary at rate of £50 per annum, with board, apartments, and laundry.

CALDERCRUIX AND DISTRICT.—Resident Medical Practitioner.

CARDIFF, CITY OF.—Temporary Assistant to Medical Officer of Health (female) for three months. Salary at rate of £250 per annum.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—House Surgeon for six months. Salary £30, with board, residence, and laundry.

CARDIFF, KING EDWARD VII. WELSH NATIONAL MEMORIAL.—Tuberculosis Physician. Salary £450 per annum.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—Bacteriologist and Pathologist. Salary £50 per annum. Also X Ray Officer. Also Assistant Surgeon.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Two House Physicians for six months. Salary at rate of £75 per annum, with board, residence, and washing.

DURBAN, ADDINGTON HOSPITAL.—Junior Medical Officer. Salary £200 per annum, with quarters, rations, and washing.

ESKDALEMUIR PARISH COUNCIL.—Resident Medical Officer. Salary £90 and proportion of Medical Grant.

GLASGOW, GARTLOCH MENTAL HOSPITAL.—Junior Assistant Medical Officer. Salary £150 per annum.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, Haverstock Hill and Kentish Town.—Physician to Out-patients.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £175 per annum, with board, apartments, washing, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—House Physician and House Surgeon, unmarried, for six months. Salary £30 each, with board, residence, and washing allowance. Also Casualty Medical Officer. Salary £200 per annum, with luncheon.

HOSPITAL FOR WOMEN, Soho-square, W.—Junior Resident Medical Officer for six months. Salary at rate of £30 per annum, with board, lodging, and laundry.

KING'S COLLEGE HOSPITAL.—Honorary Radiographer.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, 38, New Cavendish-street, W.—Fourth Assistant Pathologist.

LEEDS GENERAL INFIRMARY.—Resident Aural Officer. Salary £100 per annum. Also Resident Ophthalmic and Aural House Surgeon. Salary £50 per annum. Also Three House Physicians and One House Surgeon. Board, residence, and laundry provided in each case.

LEEDS, WEST RIDING ASYLUM, Menston.—Fourth Assistant Medical Officer. Salary £150 per annum, with board and apartments.

LEICESTER, LEICESTERSHIRE AND RUTLAND COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

LEICESTER ROYAL INFIRMARY.—Assistant House Physician for six months. Salary at rate of £80 per annum, with board, apartments, and washing.

LIVERPOOL UNIVERSITY, FACULTY OF MEDICINE.—Lectureship in Mental Diseases.

MAIDSTONE, KENT COUNTY COUNCIL.—Medical Officer of Health. Salary £800 per annum.

MAIDSTONE, KENT COUNTY OPHTHALMIC HOSPITAL.—House Surgeon, unmarried. Salary at rate of £100 per annum, with board and residence.

MIDDLESEX EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £300 per annum.

MIDDLESEX HOSPITAL CANCER RESEARCH LABORATORIES.—Third Assistant. Salary £150 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Senior House Physician. Salary £50 per annum, with board and residence.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 per annum.

NEW HOSPITAL FOR WOMEN.—Female Clinical Assistants.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £170 per annum, with apartments, attendance, light, and fuel.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Junior Assistant Medical Officer. Salary £150 per annum, with apartments, board, and washing.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, residence, and washing. Also Honorary Assistant Physician.

PORTSMOUTH ROYAL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.

PUTNEY HOSPITAL, Lower Common, Putney, S.W.—Resident Medical Officer. Salary £100 per annum, with board, &c.

ROYAL DENTAL HOSPITAL, Leicester-square, W.C.—Lecturer on Bacteriology and Clinical Pathologist.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Radiographer and Medical Electrician. Salary £100 per annum.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Junior Resident House Surgeon, unmarried, for six months. Salary at rate of £80 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five appointments.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Honorary Gynæcologist.

ST. ALBANS, HERTS COUNTY ASYLUM, Hill End.—Junior Assistant Medical Officer. Salary £170 per annum, with board, lodging, and washing.

ST. BARTHOLOMEW'S HOSPITAL.—Lectureship on Pharmacology and Therapeutics.

SURREY DISPENSARY, Great Dover-street, Southwark, S.E.—Physician. Salary 50 guineas per annum.

SWANSEA UNION WORKHOUSE.—Assistant Medical Officer. Salary about £235 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with board, residence, &c.

WADSLEY, SOUTH YORKSHIRE ASYLUM, near Sheffield.—Fourth Assistant Medical Officer. Salary £150 per annum, with board, &c.

WAKEFIELD, CITY OF.—Assistant Medical Officer of Health. Salary £250 per annum.

WESTERN OPHTHALMIC HOSPITAL, Marylebone-road, W.—House Surgeon. Salary at rate of £40 per annum.

WESTMORLAND CONSUMPTION SANATORIUM AND HOME, Grange-over-Sands.—Assistant Medical Officer. Salary £200 per annum, with board and residence.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

YORK COUNTY HOSPITAL.—House Surgeon and House Physician for six months. Salary of each at rate of £100 per annum, with board, residence, &c.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £140 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Acts at Lanark, in the county of Lanark.

BIRTHS.

BOWKER.—On Jan. 4th, at North-parade, Bath, the wife of George E. Bowker, M.D. Edin., of a son.

FRENCH.—On Tuesday, Jan. 7th, 1913, at 62, Wimpole-street, Cavendish-square, W., to Dr. and Mrs. Herbert French, a son.

MARRIAGES.

WHITE—HIND.—On Jan. 1st, at St. Wilfrid's Church, Haywards Heath, by the Rev. T. G. Wyatt, Joseph White, M.A., B.Sc., M.B., of 35, Elms-road, Clapham Park, S.W., youngest son of Joseph White, of Cambuslang, Scotland, to Alice Marie, only daughter of the late C. W. Hind, of Singapore, and Mrs. Hind, of Hillsdown, Haywards Heath, Sussex.

Notes, Short Comments, and Answers to Correspondents.

THE ELEMENTS OF RATIONAL LIVING.

As a text for a lay sermon to a Scottish audience Dr. Lachlan Grant has lately taken the rational life, expounding in simple language the broad outlines of personal and social hygiene. (The Elements of Rational Living. By Lachlan Grant, M.D. Edin., D.P.H., J.P. Glasgow: Alex. Macdougall.) Many members of the medical profession have preached this gospel assiduously in the last few years, but it has not yet obtained such general acceptation as to render further evangelisation unnecessary. Even if the tenets of the rational life were faithfully followed by educated people, which is far from being the case, there are the rising generations constantly in need of instruction, and the uneducated classes as well. Dr. Grant's theme is developed in orderly sequence and embellished with numerous quotations from the poets, from Milton to Emily Dickinson. Controversial questions are excluded as far as may be, though necessarily alcohol and vegetarianism have to be briefly touched upon. There is, it will be apprehended, little scope for originality in such a brief survey of so large a subject; but when lecturing to laymen—and seemingly youthful ones at that—originality is less to be desired than simplicity and directness. The young men and maidens of Ballachulish have in Dr. Grant a mentor whose admonitions they may profitably take to heart; and if every member of the medical profession took as much interest as he does in spreading the light of the rational life, the result would speedily be reflected in diminished tables of mortality.

THE DANGER OF PETROL IN SEWERS: WARNING TO GARAGE EMPLOYEES.

ATTENTION has already been called in THE LANCET (June 15th, 1912, p. 1661) to the danger arising from the presence of petrol in sewers. On Dec. 17th last two Manchester corporation officials were severely burned. While at work in a sewer there was a loud explosion, followed by a column of flame which shot up the manhole. The men, it appears, were working with safety-lamps, and no naked lights were used. Some time ago the corporation took precautions with a view to preventing such accidents. Notices were issued to all users of motors about the danger of pouring such liquids into the sewers. Though there is a disposition to help the corporation in this matter some people employed at garages do not seem to have realised the danger. At one garage men were in the habit of washing their hands with petrol, and this found its way into the sewers. The best way to dispose of petrol, any avoidable waste of which is becoming very unlikely, is to direct it into earth, as in a garden, or anywhere where the fumes have an opportunity of evaporating.

TRYPANOSOMIASIS IN NYASALAND.

PART XVIII. of the Diary of the principal medical officer, Mr. H. Hearsey, of the Nyasaland Protectorate, on Sleeping Sickness, dated Sept. 30th, states that in the three months that have elapsed since the last part was issued 17 additional cases have occurred, which with those previously recorded brings the total up to 93. Notes of these 17 cases are given. After a trial of "B.S." dye in three cases Dr. J. O. Shircore is of opinion that the dye is of no value as a therapeutic agent, and he even considers it harmful.

A NEW VACUUM CLEANER FOR ROAD REFUSE.

THE cleaning of our streets is a matter of the utmost practical importance for hygienic and other reasons. There are vacuum carpet cleaners. Why should not the same principle be applied to other surfaces? On Dec. 11th representatives of public bodies from all over the country were invited to Southport to witness a novel public demonstration of a machine—already used in Milan, Rome, and Hamburg—for street sweeping. The machine has a chassis with 4-cylinder 30 h.p. petrol motor, a cylindrical roller with a 4 inch diameter brush fixed to the chassis and a tender at the rear for the reception of the refuse, with a capacity of about 40 cubic feet. The width cleaned by the brush is 6 feet, and it sucks up dust or damp dirt from the track. The refuse is compressed in boxes which can be subsequently emptied at a depôt. The area which the machine can clean in an hour is 180,000 square feet.

MORE DIARIES.

WE have received a further consignment of diaries, nine in number, this time from T. J. and J. Smith, Limited, London. Medical men and dentists are likely to find the new Half-hourly Appointment Diary especially useful to them for professional purposes. It contains a week at an opening, each day being divided into half-hourly spaces from 9 A.M. to 7.30 P.M. It is interleaved with blotting-paper, contains a calendar and the usual information, and also an index. It is large quarto size, bound in limp cloth, and costs 2*s.* 6*d.* A more expensive book of this class is sold for 10*s.* 6*d.* Other diaries are the Commercial foolscap, a week at an opening, interleaved with blotting-paper, 2*s.* 6*d.*; the Post

Diary, two days on a page, interleaved with ruled blank pages, either for cash or memoranda, cloth bound, No. 5, price 3s.; a small quarto scribbling diary (No. 6), interleaved with blotting-paper and bound in boards, ruled for either cash or memoranda, 1s.; and a selection of leather-bound personal diaries at prices varying from 1s. upwards.

THE NATIONAL FOOD REFORM ASSOCIATION.

"Aids to Fitness" is the title of a small sheet issued by the Schools Committee of the National Food Reform Association, 178, St. Stephen's House, Westminster. Dealing in simple language with the Guildhall conference and some of its lessons for parents and children, it will be found of equal value in the home and on school and house notice boards. Her Majesty the Queen has accepted a copy with an expression of her warm thanks. A specimen copy may be obtained by sending a stamped addressed envelope to the secretary.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Lord Rayleigh, O.M.: The Effect of Junctions on the Propagation of Electric Waves along Conductors.—Mr. W. B. Hardy: The Influence of Chemical Constitution upon Interfacial Tension and upon the Formation of Composite Surfaces.—Hon. R. J. Strutt: Duration of Luminosity of Electric Discharges in Gases and Vapours.—Rev. P. J. Kirkby and Mr. J. E. Marsh: Some Electrical and Chemical Effects of the Explosion of Azoimide.—Dr. G. J. Burch: On Negative After-images with Pure Spectral Colours.—Mr. H. Hartridge: Factors affecting the Measurement of Absorption Bands (communicated by Prof. J. N. Langley).—Dr. G. Barlow: On a New Method of Measuring the Torque produced by a Beam of Light in Oblique Refraction through a Glass Plate (communicated by Prof. J. H. Poynting).—Dr. F. Horton: The Positive Ionisation produced by Platinum and by certain Salts when Heated (communicated by Sir J. J. Thomson, O.M.).—Mr. C. Cuthbertson and Maude Cuthbertson: On the Refraction and Dispersion of the Halogens, Halogen Acids, Ozone, Steam, Oxides of Nitrogen and Ammonia; and on the Causes of the Failure of the Additive Law (communicated by Prof. A. W. Porter).—Mr. R. Donald: Liquid Measurement by Drops (communicated by Dr. L. Hill).—Prof. W. H. Young: On the New Theory of Integration.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY.

SECTION OF SURGERY (Hon. Secretaries—James Berry, J. Murray): at 5.30 P.M.

Dr. A. G. Haynes Lovell: Actinomycosis with Special Reference to Involvement of Bone and an Account of a Case Primarily Involving the Inferior Maxilla.

Mr. T. H. Kellock: Some Clinical Manifestations of Actinomycosis.

Mr. A. G. R. Foulerton: Some Points in the Pathology and Diagnosis of Streptothrix Infections.

THURSDAY.

SECTION OF DERMATOLOGY (Hon. Secretaries—Wilfrid Fox, J. M. H. MacLeod): at 5 P.M.

Demonstration of Cases.

SECTION OF NEUROLOGY (Hon. Secretaries—Wilfred Harris, T. Grainger Stewart): at 8 P.M.

Clinical Meeting:

Cases will be shown by Dr. James Taylor, Dr. Aldren Turner, Dr. Collier, Dr. Buzzard, Dr. S. A. K. Wilson, Dr. Hinds Howell, Dr. P. W. Saunders, and others.

FRIDAY.

SECTION OF OTOLOGY (Hon. Secretaries—H. J. Davis, G. J. Jenkins): at 5 P.M.

Discussion:

Meningitis (opened by Dr. Milligan).

SECTION OF ELECTRO-THERAPEUTICS (Hon. Secretaries—Cecil R. C. Lyster, G. Allpress Simmons): at 8.30 P.M.

Dr. Lewis Jones: The Use of Condenser Discharges in Electrical Testing.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Mr. T. North: The Rise and Possibilities of the General-Practitioner-Surgeon.—Dr. J. B. Mennell: The Treatment of Recent Injuries by Massage.

SOCIETY FOR THE STUDY OF INEBRIETY, Rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—3.30 P.M., Council Meeting. 4 P.M., Discussion on Psychotherapy and the Inebriate (opened by Dr. H. C. Miller).

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—8 P.M., Presidential Address:—Mr. H. G. Plimmer: Bedellus Immortalis.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY AND THURSDAY.—5 P.M., Major R. McCarrison, I.M.S., M.D.: The Etiology of Endemic Goitre. (Milroy Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Pernet: Clinique (Skin). 5.15 P.M., Lecture:—Dr. S. A. Owen: Pneumothorax.

TUESDAY.—4 P.M., Dr. E. Wynter: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. Morrison: Treatment of Puerperal Fever.

WEDNESDAY.—4 P.M., Mr. J. M. G. Swainson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. J. Wethered: The Early Recognition of Pulmonary Tuberculosis.

THURSDAY.—4 P.M., Dr. P. Parkinson: Clinique (Medical). 5.15 P.M., Lecture:—Mr. C. J. Bond (Leicester): Mucous Channels and the Blood Stream as Routes of Infection (lantern demonstration).

FRIDAY.—4 P.M., Sir StClair Thomson: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 11 A.M., Mr. Addison: Demonstration of Minor Operations 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. B. Harman: Squint—Causes, Primary and Determining.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Diseases of the Skin 5 P.M., Lecture:—Dr. Saunders: Clinical, with cases.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Souttar: Intussusception.

THURSDAY.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Bernstein: Clinical Pathology.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Lecture:—Dr. Owen: Practical Medicine. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical, with cases.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. Souttar: Sugical Anatomy of the Abdomen 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. G. Holmes: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. C. Singer: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine. 4.30 P.M., Special Lecture:—Dr. T. Lister: Mumps.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Anæmia.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine. 4.30 P.M., Special Lecture:—Mr. H. Curtis: Modern Urinary Surgery—Points for the General Practitioner.

FRIDAY.—Out-patient Demonstrations;—10 A.M., Dr. C. Singer: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford; Medicine 3.15 P.M., Mr. L. McGavin: Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—10 A.M., Dr. W. Steuart: Radiography.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Lecture:—Dr. Inman: Recent Investigations into the Pathology of Tuberculosis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY AND FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Holmes: Headache and Migraine.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

THURSDAY.—6 P.M., Dr. M. Dockrell: Baldness—I., Bacillary; II., Parasitic; III., Atrophic; IV., Inflammatory; V., Systemic Intoxication.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. W. H. Hey: Paralysis of Childhood. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. Brockbank: Demonstration of Medical Cases. (Post-Graduate Clinic.)

FRIDAY.—4.30 P.M., Mr. Thorburn: Surgical Demonstration. (Post-Graduate Clinic.)

SALFORD ROYAL HOSPITAL.

TUESDAY.—Dr. H. T. Ashby: Functional Disease in Early Life. (Post-Graduate Demonstration.)

For further particulars of the above Lectures, &c., see Advertisement Pages.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1912 were given in THE LANCET of Dec. 28th, 1912.

VOLUMES AND CASES.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 8th, 1913.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan.	2	29·98	S.W.	0·01	69	49	40	40	40	Fine
,,	3	29·89	S.	0·04	56	50	40	43	44	Overcast
,,	4	29·91	S.	...	56	51	44	47	49	Overcast
,,	5	29·87	S.W.	0·15	57	52	47	48	50	Cloudy
,,	6	30·09	S.W.	0·29	60	49	41	42	43	Overcast
,,	7	30·09	S.W.	...	67	51	43	46	48	Cloudy
,,	8	30·01	SSE.	...	46	50	45	44	45	Fine

The following journals, magazines, &c., have been received.—Bedrock, British Journal of Dental Science, Dominion Medical Monthly, Annales et Bulletin de la Société Royale des Sciences Médicales et Naturelles de Bruxelles, American Journal of Medical Sciences, London Hospital Gazette, West London Medical Journal, Therapeutic Gazette, Journal of Nervous and Mental Diseases, Detroit Medical Journal, St. George's Hospital Gazette, Duodecim, Nordiskt Medicinskt Arkiv, Polyclinic, Transactions of the American Odontological Society, Annali di Medicina Navale e Coloniale, Tidsskrift for den Norske Lægeforening, Clinique Infantile, Archives Générales de Médecine, Jahrbuch für Kinderheilkunde und Physische Erziehung, Journal de Médecine de Bordeaux, Journal of Laryngology, Rhinology, and Otology, Local Government Review, Archives de Médecine et de Pharmacie Militaires, Archiv für Experimentelle Pathologie und Pharmakologie, Proceedings of the Royal Society of Medicine, Tropical Diseases Bulletin, Public Health, Review of Neurology and Psychiatry, Quarterly Journal of Medicine.

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